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AGING AND THE WORK FORCE: HUMAN RESOURCE STRATEGIES

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PREFACE

In the coming years this country will need to reach new understandings about the impact of our aging labor force upon human resource policies and practices. Older persons will need to be seen more often as a potential resource rather than as a dependent population. To put this new understanding into practice, human resource managers will need to develop new perspectives and new management techniques for middle-aged and older workers. The application of age-neutral functional criteria in the human resource management system is a positive way for management to increase efficiency and productivity in ways consistent with this new understanding. Accordingly, this staff information print explores this approach in the broader context of the need for human resource managers to reexamine the currently accepted employment policies that tend to rush older workers into retirement while overlooking the productive contributions they are capable of making.

The demographics of our national work force will have important implications for human resource managers by the end of this decade. The bulk of our current work force and the segment that has grown dramatically in recent years are the younger workers—those between ages 16 and 44. But the growth of this part of the labor force will cease entirely sometime within the next 10 years. By 1990, the Department of Labor projects that the work force between ages 16 and 44 will peak at 90 million and will then start to decline before the year 2000. So, if our economy is to continue to grow and prosper, it is clear that the expanding labor force needed to produce economic growth must be found among middle-aged and older persons. And it is just those workers whose labor force participation rates have been falling for the past 20 years. In particular segments of the economy, especially where specialized skills are necessary, we are already seeing labor shortages develop that are directly related to labor force exit by older workers.

The message of this paper to human resource managers is that this demographic shift in the labor force will affect all members of a company's work force, young and old alike. If the process is understood, it can be managed well and effectively to the benefit of all.

The entire context surrounding older worker issues is a dynamic one. Age discrimination in employment is a growing area of concern for employers and older workers. Inflation has eroded the expectation of older workers that fixed pensions will continue to be adequate. Life expectancy at age 65 is now an average of 16.4 years and can be expected to increase further. Although relatively few individuals today continue to work to age 65 or beyond, this may well change as awareness of age-related protections increases and if economic uncertainties persist.

Public attitudes have also been changing. A Harris survey conducted in 1981 found that four of every five workers between ages 55 and 64 did not want to stop work completely upon retirement. Most wanted to continue working part time, while a significant minority desired to continue full time past age 65.

This paper was prepared for the Special Committee on Aging, in conjunction with the American Society for Training and Development, a nonprofit educational society which serves the needs of professionals in the human resource development field. The society retained Julia French for the development of this paper. Ms. French, formerly a research associate with the Institute for Work and Learning, Washington, D.C., is a consultant and writer on policies and issues affecting middle-aged and older workers. We wish also to acknowledge John Connors, past president of ASTD, Les Cross, principal of Les Cross & Associates, and Donald Fronzaglia, director of human resource and development, the Poloroid Corp., for their review and comments during the drafting of this paper.

It is our hope that this paper will contribute to an understanding of the changes needed to maximize the contributions of older workers who today are faced with too few options for a continuing and productive role in our society.

JOHN HEINZ,
Chairman.
LAWTON CHILES,
Ranking Minority Member.

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AGING AND THE WORK FORCE: HUMAN RESOURCE STRATEGIES

EXECUTIVE SUMMARY

The demographics of aging in the United States will have increasingly more important implications for human resource managers as time passes. Companies will be dealing with an expanding and aging work force. Human resource planners in industry need to take a practical look both at national and at their own company demographics on middle-aged and older workers. There are several reasons for this perspective. First, just as the costs of social security will expand over the coming years, so will the costs of company pension systems increase as workers retire early and live longer. Second, as unpleasant as the phenomenon of age discrimination is, managers need to be aware of it. Rather than deal with workers in the courts, as was the case with minorities and women in the 1960's and 1970's, planners need to look at workers over the age of 40 in positive ways. The question should be how to use the work potential of these individuals for both their own benefit and company profit, rather than how to get rid of them through expensive early retirement policies. Third, middle-aged and older workers constitute—or, rather, can constitute—a highly productive segment of the company's work force. Oftentimes, human resource systems emphasize younger groups for development and allow older employees to drift toward retirement. A new and practical perspective is called for—one that looks to costs, profits, and benefits associated with investing in, and training workers, as they move through ages 40, 50, and beyond.

Developing and applying functional criteria and using them in the personnel and human resource system is a positive way to manage age variables in the company work force. Such criteria are age-free and can help managers develop hiring standards, performance appraisal systems, training and retraining programs, and all other components of the human resource system—including objective retirement norms. This paper discusses a variety of job analysis systems as the means to develop functional criterial with emphasis, for purposes of illustration, placed on functional job analysis.

Three case studies are presented for consideration. Aer Lingus, General Foods, and the air traffic control second career program provide illustrations of how human resource planning can address and accommodate age variables. In many instances, the organizational and training approaches used in the case studies work well for middle-aged and older employees—and for all other segments of the company labor force as well.

Productivity and age is a major concern for managers. Current 50-year-old workers may well stay on with the company for 20 or

more years. Maintaining proficiency and developing flexible job design strategies are important. Unfortunately, studies on aging and productivity are inconclusive, as yet. While some criteria for assessing productivity are now available, it will be up to interested companies to further develop appropriate productivity measures. The paper presents one approach—a basic human capital analysis on the costs and possible benefits of retaining long-term workers.

The paper concludes with a series of recommendations. Because age is a universal characteristic affecting all employees, human resource managers can and should:

—Conduct an age analysis of their work force and make whatever changes are called for based on that data.

—Become familiar with age discrimination statutes and major cases in order to avoid litigation and policies that tend to lead to age discrimination.

—Review company hiring and promotion practices from an age perspective and suggest new ways to deal with middle-aged and older job seekers as well as current long-term employees.

—Develop and apply functional criteria as a means for evaluating, retraining, and arriving at positive alternatives for improved management of middle-aged and older employees.

—Employ more flexible retirement and retention options in order to help retain experienced and valued long-term workers rather than discard this potential resource.

—Develop an educational program on age factors affecting the company for policymakers, human resource planners, supervisors, and other appropriate levels of management.

Chapter 1

OVERVIEW: THE NEED TO DEVELOP AGE-FREE EMPLOYMENT POLICIES

Why should management worry about the seemingly intangible phenomenon of an aging work force? There are some reasons:

—The impact of changing demographics are real. It is simply a matter of time before aging catches up with a company.

—The assumption that the current group of older workers will retire "on schedule" may be comfortable—but may not be realistic. Economic pressures on the relatively fixed income of retirees is a serious matter. Current older and not-so-old employees are not blind to that fact. Expected retirements and early retirements may be postponed.

—A look at life expectancy tables is also revealing. Workers now aged 40, 45, 50 can look forward to many years of life with generally improved health expectancies during those years. This same generation has achieved higher levels of education and is more politically aware than their older counterparts. They may well choose extended forms of employment. Companies, in fact, may need them if younger replacement groups are small. How will human resource systems manage these groups?

—Unilateral decisions on what comprises normal and early retirement can no longer be made by management. Workers over age 40 cannot be retired on the basis of age alone. This means that an able, 50-year-old employee may choose to remain on the job for 20 more years.

Workers don't reach retirement age all of sudden. They have a labor force and career history which dates back to the time they secured the first job. Movement in the labor force or in a company work force, by necessity, is associated with age, length of service, promotion, development, or turnover within organizations. This movement is related to the kinds of job or career changes the worker makes over time—and as he or she gets older. What happens during the intervals? Does a worker continue to develop by taking education and training or redirecting job experience into other, more advanced areas? What do employers do with the worker over time—and as the worker ages? These questions raise critical issues regarding aging and management of a company's human resources.

Unlike other individual characteristics, such as race or sex or nationality, aging is universal—all of us are growing older all the time. This normally admits to additional changes, such as gaining in experience and knowledge and maturity in a more or less ongoing fashion. Change is understandable and inevitable over the long term; and so is aging. It sometimes seems difficult to bear in mind, however, that aging is an all-inclusive process not limited to those with grayed hair who, thus, might be open to such assumptions as diminished capabilities. This a dynamic concept of the aging process and one with which human resource managers should be familiar. Changing interests and abilities affect all workers. Developing middle-aged and older workers as a part of company resources—rather than separating them out as eventual candidates for retirement either unintentionally or deliberately—will provide both some new perspectives on these workers and some first steps toward positive solutions.

A. A NOTE ON COMPANY POLICIES AND LONG-TERM WORKERS

Other than retirement and pension policies, few companies have policies which promote development and job retention opportunity for long-term employees. This is not surprising. Many companies have gone to great lengths and expense to provide pensions for their employees. These policies, as humane as they appear to be, assume that workers leave the company for retirement. Further, many companies view retirement and early retirement as a sort of safety valve which assures open progression lines for younger employees as the older ones retire. Developmental opportunities, for similar reasons, are often reserved for younger workers. Why invest in workers who will retire soon?

It is difficult for human resource managers, who work in one sector of an organization, to promote development and job retention policies in lieu of traditional retirement policy. Any policy is hard to change. If corporate officials do not see an immediate and pracitical reason to make a change or develop new policies for any group of workers, it most likely will not occur. This point is made because new approaches to middle-aged and older employees may well require changes in corporate policies. These don't come about over night. This paper presents a number of positive approaches, examples, and suggestions which represent starting points to be considered in developing more practical policies and programs related to middle-aged and older workers.

B. HOW OLD IS OLD?

It is a truism that individuals and workers age a year at a time but in different ways. Every manager can point to a 65-year-old worker who is a high-level performer and a 35-year-old who ought to retire. Aging is a relative process influenced by a variety of genetical, psychological, and physiological factors. In addition, workers who have had 15, 20, 25 or more years of work experience may not be all that old in years. This paper uses one or two general terms in referring to these workers. Long-term, or longer term, workers include the two broad categories of both older workers and their counterparts who are middle aged. Chapter 2 provides more specific definitions of middle-aged and older workers—terms which also are used throughout the text. These categories are arbitrary, but they are used to recognize and emphasize the fact that aging in the work force is not limited to one class of workers who have reached a certain chronological age. On a more concrete level, attention is drawn to both middle-aged and older workers because legislated employment protection begins at age 40 for most workers.

C. PURPOSE AND SCOPE OF PAPER

The main purpose of this paper is to stimulate human resource planning and development regarding age factors as they affect the entire personnel system. Policies and practices associated with hiring, performance appraisal, career development, retention options, and other personnel system components need review. A secondary purpose of the paper is to help managers differentiate between chronological age, the process of aging, and to understand how time and length of service can affect the development of workers. In order to illustrate the context and need for positive response, the paper reviews population patterns, labor force profiles, and labor force projections. An effort is made to show the changes that have occurred over time for different age groups and what the significance of these changes can mean for human resource planning. Chapter 2 presents this information and data.

Chapter 3 examines retirement policies in the Nation and how these, in effect, have limited employment options for longer term workers. It briefly reviews social security, private pension systems, and the trends toward early retirement. Changing economic factors are then considered along with the growing legal phenomenon of age discrimination in employment. Both factors may influence future labor force activity of middle-aged and older workers.

Chapter 4 of the paper explores some approaches for accommodating, developing, and utilizing these workers. The need for functional criteria to assess both job requirements and abilities of long-term workers is emphasized. Such techniques can help to eliminate age bias from employment systems and assure proficient job performance by middle-aged and older employees. While it is stressed that there are many job analysis systems capable of generating such criteria, for the purpose of illustration, one such system, functional job analysis, is emphasized.

Selected case studies which illustrate how organizational change and work analysis methods plus training strategies can accommodate and build on the strengths of experienced workers are presented in chapter 5. This is followed by a discussion on age, productivity, and human capital. There is no guarantee that long-term workers will remain productive or repay management training investments unless new developmental strategies and programs are built and tried.

The paper concludes with a summary and suggested steps management can take in developing responsive programs. An annotated review of selected resource materials—books, journals, and articles—is included as an appendix.

Chapter 2

SUMMARY DEMOGRAPHICS ON MIDDLE-AGED AND OLDER WORKERS

This section is intended as an overview of the trends and patterns seen in the adult labor force over the past several years in relation to its present composition and to reasonable expectations within the coming years. Statisticians traditionally divide the labor force into three subgroups—younger workers, ages 16 to 24; prime age workers, 25 to 54; and older workers, ages 55 and above. Because this paper focuses on middle-aged and older workers, somewhat different age categories are utilized. That is, middle-aged workers are regarded here as individuals ages 45 to 64. In turn, this group is divided into workers ages 45 to 54 and those ages 55 to 64. Older workers are considered as those ages 65 and above. Admittedly, all age grouping are arbitrary, but it is felt that the above distinctions will help human resource managers (HRM's) to become more aware of age differences within the general labor force and within their own company work force.

The above age groups are dealt with according to their numbers in the population, the civilian labor force, and their labor force participation rates. Labor force participation rate is the percentage of individuals in a given age group who are employed or seeking work compared to the total population of that entire age group. Participation rates are important because they show the changing trends of labor force activity by the different age groups over time and allow both government and private sector policymakers to respond to and plan for these changes.

A. MIDDLE-AGED WORKERS

There are several reasons for establishing the above age breaks for middle-aged workers. First, the 45 to 54 age group are, in many ways, the mainstay of the labor force. They have high labor force participation rates, which will be noted later. Moreover, given economic pressures such as inflation, this group may choose extended worklife and not follow traditional retirement patterns when they are older. Human resource managers need to monitor and respond to these age-related trends. The 55 to 64-year-old group poses a somewhat different question. Traditionally, members of this group are headed for retirement and the idea of continuous or new career development for them rarely occurs to managers. But again, economic factors and individual choice may well change the usual retirement aspirations for this group. HRM's will need to be aware of these trends and plan for them as they develop.

WORKERS 45 TO 54

The following table illustrates that the labor force participation rate for workers ages 45 to 54 has risen 9.2 percent over a 30-year span. A look at the rates for men as compared to those for women is more revealing. Between 1950 and 1980, the rates for women climbed a total of 23 percent. Most of this is reflected in the increases between 1950 and 1970 (up 17.3 percent). Yet, after a fractional drop from 1970 to 1975, the labor force participation rate for women climbed 6.1 percent in only the 5 years between 1975 and 1980. This increase is more significant because of the population decline between 1975 and 1980.

Labor force participation rates for men ages 45 to 54, on the other hand, show a marginal but relatively steady decline from 1955 onward. As with women, the male population declined between 1975 and 1980; but where rates for women have risen, those for men have continued creeping downward.

TABLE 1.—CIVILIAN POPULATION AND LABOR FORCE BY SEX FOR INDIVIDUALS AGES 45 to 54

[In thousands]

	Total 45–54 population	Total number in labor force	LPR[1] total	Men			Women		
				Total population	Number in labor force	LPR[1] men	Total population	Number in labor force	LPR[1] women
1950	17,253	11,444	66.3	8,473	8,117	95.8	8,780	3,327	37.9
1955	18,645	12,993	69.7	9,160	8,839	96.5	9,485	4,154	43.8
1960	20,750	14,977	72.2	10,061	9,610	95.5	10,689	5,367	50.2
1965	21,839	15,811	72.4	10,551	10,034	95.1	11,288	5,777	51.2
1970	23,151	17,108	73.9	11,095	10,447	94.2	12,056	6,111	55.2
1975	23,487	17,068	72.7	11,309	10,389	91.9	12,178	6,679	54.8
1980	22,484	16,979	75.5	10,881	9,912	91.1	11,603	7,067	60.9

[1] Labor force participation rate (percentage).

Source: Civilian Labor Force, 1950–80, Bureau of Labor Statistics, U.S. Department of Labor.

On the whole, the increases in labor force participation for women have overshadowed the slight declines in participation for men. This is especially evident in the total labor force participation rate increase between 1975 and 1980. General explanations for the trend among women include increased divorce rates which often require women to seek jobs, economic pressures on middle-aged housewives to find work in order to augment family income, and growing interest on the part of women to pursue independent jobs and careers. Human resource managers are well aware of these trends but often neglect age considerations. Women in this age group enter the labor force with a variety of skills and educational backgrounds. They also can look forward to 20 to 25 years of work. The issues of assessing their skills, possibly training or retraining, and then placing them in job roles for longer periods of time should be of special concern to the HRM. These issues will be treated in more detail later in this paper.

The declines in labor force activity among men ages 45 to 54 are not all that significant. The data could suggest that early retirement rates for men ages 50 to 54 are on the increase. Thirty-and-out policies, early retirement incentives, and stressful jobs (e.g., public safety officers) could also account for labor force exit among this group of relatively young workers. HRM's need to examine early retirement rates in terms of both increased company pension costs and the premature loss of skilled and experienced workers. These and related factors on early retirement and retention options will be treated in subsequent sections.

WORKERS 55 TO 64

Labor force participation data for middle-aged workers ages 55 to 64 is more various than comparable data for those 45 to 54. By 5-year increments, the total labor force participation rate for workers ages 55 to 64 climbed until 1965, a 5.2-percent increase. From 1965 through 1980, however, the total rate decreased 5.9 percent (from 61.9 percent in 1965 to 56 percent in 1980). This is illustrated below in table 2.

A breakdown of the total labor force participation rates for ages 55 to 64 into those for women and those for men is also worth noting. From 1950 to 1965 over 1.7 million women in this age group joined the labor force. This has resulted in a labor force participation rate increase for women of over 14 percent. By contrast, the rates for the 5-year increments between 1965 and 1980 have remained relatively stable.

Middle-aged men ages 55 to 64 present an entirely different picture during this timespan. Incrementally, participation rates began to turn downward after 1955, gradually declining from the high of 87.9 to 83 percent by 1970. The decade between 1970 and 1980, however, shows over a 10-percent drop in the labor force participation rate for men in this group.

TABLE 2.—CIVILIAN POPULATION AND LABOR FORCE BY SEX FOR INDIVIDUALS AGES 55 TO 64

[In thousands]

	Total 55–64 population	Total number in labor force	LPR [1] total	Men			Women		
				Total population	Number in labor force	LPR [1] men	Total population	Number in labor force	LPR [1] women
1950	13,462	7,633	56.7	6,667	5,794	86.9	6,811	1,839	27.0
1955	14,308	8,513	59.9	6,965	6,122	87.9	7,357	2,391	32.5
1960	15,412	9,386	60.9	7,373	6,400	86.8	8,027	2,986	37.2
1965	16,721	10,350	61.9	7,994	6,763	84.6	8,727	3,587	41.1
1970	18,248	11,277	61.8	8,583	7,124	83.0	9,658	4,153	43.0
1975	19,557	11,226	57.4	9,211	6,982	75.8	10,351	4,244	41.0
1980	20,982	11,755	56.0	9,908	7,165	72.3	11,074	4,591	41.5

[1] Labor force participation rate (percentage).

Source: Civilian Labor Force, 1950–80, Bureau of Labor Statistics, U.S. Department of Labor.

Over the 30-year span, the combination of the fluctuations in labor force participation rates for men and for women ages 55 to 64 has left a total participation rate in 1980 only minimally reduced from that of 1950. Yet, the total population for both segments of this age group has expanded every year. Over the period as a whole, the earlier acceleration in participation rates for women has served to compensate for the losses in rates for men. The closer examination of the data, however, doesn't easily dismiss the overall results. What happened to cause the 10-percent drop in the rates for men and the leveling off in participation rates for women?

There is general agreement that both these phenomena are rooted in prospects for financial security in retirement. Even with vesting requirements, more and more workers have reached that combination of age with years of service which equals retirement eligibility established in most private pension plans. In addition, the social security amendments in 1972 brought about the cost of living indexes.

B. OLDER WORKERS STATUS

Comparison of the size of the 65-and-over labor force to the size of the 65-and-over population demonstrates that the constancy of the labor force numbers gives lie to actual circumstances. As table 3 illustrates, while the number of people in the labor force who are 65 and over is approximately the same now—about 3 million—as it was in 1950, the size of this population segment as a whole has more than doubled. Thus, while the 1950 labor force participation rate was 26.7 percent, the 1980 figures reflect a drop to 12.6 percent.

TABLE 3.—CIVILIAN POPULATION AND LABOR FORCE BY SEX FOR INDIVIDUALS AGES 65 AND OVER

[In thousands]

	Total 65+ population	Total number in labor force	LPR [1] total	Men			Women		
				Total population	Number in labor force	LPR [1] men	Total population	Number in labor force	LPR [1] women
1950	11,378	3,038	26.7	5,358	2,454	45.8	6,021	584	9.7
1955	13,718	3,306	24.1	6,379	2,526	39.6	7,358	780	10.6
1960	15,356	3,194	20.8	6,909	2,287	33.1	8,398	907	10.8
1965	14,461	3,108	17.8	7,638	2,131	27.9	9,760	976	10.0
1970	18,947	3,221	17.0	8,075	2,164	26.8	10,887	1,056	9.7
1975	21,297	2,939	13.8	8,783	1,906	21.7	12,446	1,033	8.3
1980	23,892	3,021	12.6	9,839	1,877	19.1	14,053	1,144	8.1

[1] Labor force participation rate (percentage).

Source: Civilian Labor Force, 1959–80, Bureau of Labor Statistics, U.S. Department of Labor.

For all practical purposes, this rate drop is ascribed to older men. While the size of the 65+ male population has continued to expand, their numbers in the labor force have almost halved. Thus, the participation rate for men in this age group has dropped from 45.8 percent in 1950, to 27.9 percent in 1965, and down to 19.1 percent in 1980.

By contrast, the number of 65-and-over women in the labor force has almost doubled in the 30-year span. Here, the labor force increases more or less correspond to increases in population size, making the participation percentage rate for women relatively constant. It is the increase in number of 65+ women in the labor force that has compensated for the decreases in the number of men in the labor force.

The major explanation for these trends for 65-and-over workers, again, is rooted in retirement policy, which has the effect of removing older workers from the labor force usually at the traditional retirement age of 65. There are several reasons why managers will want to consider the over-65 worker. First of all the weight of the demographics themselves suggest that older workers should be afforded more of an opportunity to remain in the labor force. The costs in terms of retirement income systems will simply be too great for corporate and individual taxpayers to bear. Second, the same economic pressures that will most likely cause middle-aged workers to defer earlier retirement will operate upon older workers and influence them to defer "normal" retirement.

C. PROJECTED DEMOGRAPHICS

So far, past trends and present population/labor force status of specific age groups—middle-aged groups and older workers—have been reviewed. One may well point out, however, that people aren't born aged 45 to 54; neither do they stay age 45 to 54. It is well to remember that, as time passes, all people grow older. The child grows older and becomes an adult; the adult in turn, becomes middle aged. The group aged 45 to 54 in 1975, was aged 35 to 44 10 years earlier, and will be 55 to 64 in 1985. The inherent fluidity of the population and the labor force respecting age is difficult to assess adequately and underscores some of the artificiality involved in labor force projections. The process could be compared to pouring liquid from one glass to another and another successively and trying to take measurements from each glass before the process is completed.

While recognizing the limitations of labor force projections, they are useful to illustrate the possible patterns of activity on the part of different age groups. This section will present two perspectives. The first is projections of different age groups in the labor force as estimated by the U.S. Department of Labor. The second is an interpolation of that information showing the projections in a way which suggests the procession of age groupings in time using 1975 as the base year, through 1985, and into 1995. These perspectives are important to HRM's because they help them realize that their respective company work forces have an age structure and that this structure changes over time. Analyzing company work forces by comparative age groups helps management to relate the changing age structure to the changing requirements of service and production. Again, labor force participation rates are used because they reflect the comparison of individuals in a given age group at work, or seeking work, to the total population of the age group. Both are drawn from intermediate growth labor force projections.

TABLE 4.—CIVILIAN LABOR FORCE PARTICIPATION RATE BY SEX AND AGE, 1975 AND PROJECTED TO 1995

[In percent]

Ages	Actual—1975		Projected			
			1985		1995	
	Men	Women	Men	Women	Men	Women
16 to 24	78.7	48.3	76.9	69.7	76.1	77.0
25 to 34	95.3	54.6	94.7	75.1	94.0	83.7
35 to 44	95.7	55.8	95.4	72.9	95.1	81.7
45 to 54	92.1	54.0	91.0	61.7	90.6	66.2

TABLE 4.—CIVILIAN LABOR FORCE PARTICIPATION RATE BY SEX AND AGE, 1975 AND PROJECTED TO 1995—*Continued*

[In percent]

Ages	Actual—1975		Projected			
			1985		1995	
	Men	Women	Men	Women	Men	Women
55 to 64	75.8	41.0	69.7	41.6	66.5	42.3
65+	21.7	8.3	17.5	7.7	14.3	6.8

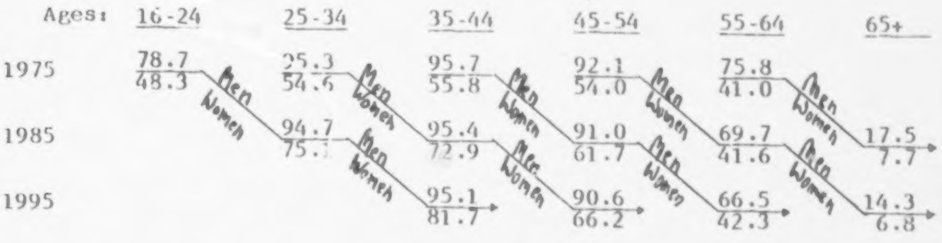
Source: Derived from Howard N. Fullerton, Jr., "The 1995 Labor Force: A First Look," Monthly Labor Review, December 1980.

This data is helpful because it shows the estimated differences in labor force participation rates for each age group from 1975 through 1995. For the 45 to 54 age group, a marginal decline is projected for men from the 1975 base year. Anticipated participation for women in this age group, on the other hand, increases somewhat, moving up 7.7 percent between 1975 and 1985, and 4.5 percent from 1985 to 1995. Projected rates for the male 55 to 64 group decline only slightly more sharply than for men 45 to 54; the rates for women 55 to 64 increase fractionally in each projected year. The overall levels for this age group are 10 to 20 percent smaller than those of the 45 to 54 group.

For the 65-and-above age group, the projected rates are also proportionately lower with those for men declining from 21.7 to 14.3 percent in 1995. For women, although the base year rate is low, the projected rates decline only fractionally.

What this data does not show is the changes occurring for each age group as they mature over the 20-year period. To do this, another perspective is necessary. The following chart illustrated the impact of aging for each group as it moves from the 1975 base year through 1995.

CHART 1. MOVEMENT OF AGE GROUPS THROUGH THE LABOR FORCE, 1975 AND PROJECTED THROUGH 1995 BY LABOR FORCE PARTICIPATION RATE



Note: Derived from U.S. Department of Labor, Bureau of Labor Statistics, labor force projections.

This chart suggests the currently projected passage, or transition of different groups through the labor force by age and over time. It should be noted that although younger workers are tracked through the labor force, the definitions of longer term workers (those middle aged and older) are not altered. For example, workers aged 35 to 44 in 1975 will be ages 45 to 54 in 1985. The following discussion of the chart reflects this fluidity.

YOUNGER WORKERS

The chart indicates that workers ages 16 to 24 and those 25 to 34 in 1975 will become the mainstays of the labor force from 1985 through 1995. Male workers in these age groups show a generally increasing pattern of labor force activity over the 20-year period. For women in both these groups, the change is dramatic. The rates for women ages 16 to 24 in 1975 increase by 26.8 percent in 1985 and by another 6.6 percent in 1995. Women ages 25 to 34 in 1975 also projected to show substantial increases over the period. The net gain for this group over the two-decade period is 11.6 percent. The effects of aging, therefore, will lead to an increase in labor force activity for these workers as they move into the middle years.

MIDDLE YEARS WORKERS

In contrast, the middle years for both men and women will show declines over the 20-year span. In 1975, men aged 35 to 44 had a participation rate of 95.7 percent. This will decline over the 20-year period to 66.5 percent when these workers will be ages 55 to 64 in 1995, a loss of 29.2 percent. For women in this age group in 1975, there is expected to be a slight increase from 55.8 to 61.7 percent at which point they will be 10 years older in 1985. The rate will drop however, to 42.3 by the time they have reached ages 55 to 64, in 1995. The losses for both men and women over this period are based on current retirement policies and tend to ignore the economic factors which may well exert pressures on this group to stay in the labor force.

WORKERS OVER AGE 55

In 1975, men and women ages 55 to 64 had a participation rate of 75.8 and 41 percent respectively. This is expected to plunge to 17.5 and 7.7 percent in 1985, the point at which they will be 10 years older. Similarly, men and women reaching ages 55 to 64 in 1985 will show the same type of decline by 1995. Participation rates for men will drop from 69.7 to 14.3 percent. Those for women will drop from 41.6 to 6.8 percent.

IMPLICATIONS

It is important to note the changes occurring in the different age groups described in the chart. Younger workers entering the labor force increase in terms of participation rates for the 20-year period described. But then, as they move on in age, their participation rates inexorably drop. Middle years workers, who have the highest participation rates between the ages of 35 to 44 also show relatively sharp declines as they move over the 20-year period. Workers 55 to 64 show stunning declines as they move into what seems to amount to the last 10 years of their worklife. The intergenerational dynamics are extremely important to human resource managers and the age patterns and trends described above should take on increasing significance as management examines its own company work force in a similar format. In summary, employment-related policies affecting workers in their younger and middle years need to be reexamined. Retirement policies which seem to account for current and projected diminishment of the older worker group also need reexamination.

D. LONGEVITY

While labor force projections, for reasons noted, are not all that certain, longevity estimates are fairly certain. The Nation as a whole is aging and workers who leave the labor force will be living longer in a paid-for retirement system. A brief look at longevity estimates is instructive.

TABLE 5.—AVERAGE LIFE EXPECTANCY AT SELECTED AGES

	Total years, both sexes	Average years for men	Average years for women
Total life expectancy	73.3	69.5	77.2
Age groups:			
16 to 24	57.4	53.7	61.1
25 to 34	48.1	44.7	51.5
35 to 44	38.7	35.5	41.9
45 to 54	29.8	26.7	32.7
55 to 64	21.6	18.9	24.2
65 to 74	14.7	12.6	16.6
75+	8.3	7.0	9.1

Source: Derived from Monthly Vital Statistics Report: Final Mortality Statistics, 1978. vol. 29, No. 6, Sept. 17, 1980. National Center for Health Statistics. Abridged Life Tables by Color and Sex: United States, 1978 p. 19.

According to averages, a worker between ages 55 to 64, for example, can expect to live roughly 21 more years, or until somewhere around ages 76 to 85. Those workers 65 and over can expect to live 14 or more years. Moreover, there is general agreement that average life expectancy at all ages is likely to increase over the coming years as mortality rates continue to drop.

Several observations can be made about longevity. The first is that if, indeed, Americans will be living longer, then why can't they spend proportionately longer time in the labor force? Another observation is that if older workers retire at traditionally normal or early retirement ages, who will support the dependency costs if these individuals remain fully retired? It is nice to think that the great majority of older workers have adequate pension plans, savings, and other resources to see them through their retirement years. One of the major conclusions of the recent President's Commission on Pension Policy was, however, that this isn't happening. Older workers may need to remain in the labor force in some capacity to support themselves. A final observation is that the current generation of workers between ages 45 to 64, currently middle-aged workers, may well expect to enjoy better health than the current generation of Americans over age 65 and choose to remain in the labor force beyond traditional retirement ages. This also should influence management in its evaluation of personnel and retirement policies.

By way of summary, the trends and patterns seen for middle-aged and older workers over the past several years demonstrate a heavier emphasis on labor force exit for men. Patterns for women show marked increases in participation rates with much less similarity to the exit trends of men. In addition, labor force predictions suggest that these trends are likely to continue.

The implications of changing population and labor force demographics are of special importance to employers. The Nation's middle-aged and older labor force can become a more viable company resource as time passes. Premature loss of skilled and experienced employees and mounting costs of pensions and other factors discussed in the following section call for a serious and comprehensive review of retirement and employment practices needed to successfully develop and manage that resource.

Chapter 3

ECONOMIC CONSIDERATIONS

In the previous section, the changing demographics of the population and the labor force and how these might affect human resource management and planning have been explored. The present section addresses a variety of economic factors which can also affect human resource planning for and management of long-term employees. The growing costs of retirement income systems, inflation effects, and legislated employment protection for middle-aged and older workers are reviewed in turn. Positive economic aspects for hiring and retaining these workers are also considered.

In broad terms, what has been happening to the labor force participation ages is understandable. Setting earlier attrition ages at one end of the labor force spectrum is an understandable response to the influx of the baby boom population into the labor force from the other end of the spectrum. In part, though, the effect has been one of allowing retirement policy to determine employment policy by default, both nationally and for the individual company. There have been several perceptions involved:

—It is often viewed as cheaper to replace the older or middle-aged worker with a younger worker.

—As a worker ages, the company tends to view investment in him or her in terms of pensions and retirement rather than in terms of continued development and utilization.

—The older worker stereotypes held by management are often negative in terms of productivity and ability, unconsciously leading to neglect.

It also seems to have been felt that investments in retraining longer term workers are costs which will not outweigh benefits. The costs of retirement policies, however, are already beginning to be felt in the social security system and in private pension systems. Both are a cost to the company.

A. SOCIAL SECURITY

Although it has evolved considerably, the primary purpose of social security is that of partial wage replacement in retirement. The expanded system also includes benefit coverage in the two general areas of health and disability, with separate trusts established to fund each of the three components. Financing the system, however, has become a difficult proposition. Effective in 1975, social security benefit rates were tied to the Consumer Price Index. In 1977, the indexing formula was adjusted and a series of payroll tax increases was initiated to cover funding. This norm has led to severe stress on the retirement trust fund due to factors such as high unemployment and slow growth in the economy and to increase longevity.

The long-term problem of social security is a function of the demographics cited earlier. A narrowing and younger labor force will be unable to support the larger numbers of individuals in full retirement shortly after the turn of the century under present funding terms. Congress has not addressed this problem as yet.

Excluding the possibility of substantial general revenue support derived from taxes, the two basic alternatives are reducing benefit payment levels and increasing the social security taxes on payrolls. The company pays the same amount in social security taxes as the worker, a dollar-for-dollar match. Thus, a social security tax increase represents a direct and proportional increase in costs to the company.

B. Private Pensions

Pension plans are one mechanism by which management is able to attract and to then retain desirable employees; they are also used to encourage and facilitate labor force exit. Payments from the company pension plan are considered an earned benefit for workers completing a specific number of years of service and/or attaining some predetermined age.

Current national estimates suggest that about half of the private sector work force is covered by some form of pension plan, a considerable expansion from the 25-percent coverage level of 1950. This increase in the number of workers covered, however, is largely attributable to the growth in the size of the work force rather than increases in numbers of pension plans (President's Commission on Pension Policy, 1981).

Most of these plans derive their funding either substantially or totally from the company. At the national level, the average amount employers set aside to cover pension benefits has expanded 36 percent from 1974 to 1980 (Washington Post, November 1980). Although partially deductible for income tax purposes, pension plan funding can represent considerable costs to the company. Further, the nationally averaged cost increases suggest that a closer look at individual company increases may be warranted.

The increasing costs of sustaining the pension fund may have a relation to earlier retirement eligibility age. As mentioned earlier, legislated changes in social security are clearly a factor in earlier retirement age trends. But there also are terms in many private sector pension plans specifically promoting earlier retirement. For example, a lump sum or annualized bonus subsidy may be offered to a prospective retiree along with reducing or waiving the actuarial reductions standard for early retirement. Thus, after the extra subsidy payment is completed, the remaining benefit itself would be a smaller amount than it would have been if the pensioner had continued working with a higher wage level used in computing the eventual benefit.

Two possible flaws in this example become apparent. First, if the prospective retiree is age 65 or over, the company's continued pension contributions are not required, at least under present Government rules. Even at higher wages, continued employment wouldn't change the amount of the pension. The second flaw relates to demographics. If the prospective retiree is younger than the normal retirement age, the pension will be paying out benefits that much longer. In view of increases in longevity, this could make the total cost of retirement higher for the company.

The accumulated cost for the entire company retirement benefit program is measured by total company-paid social security taxes and the financing associated with its own private pension plan. Social security taxes are an ongoing and increasing company expense as the payroll tax rates increase. The company pension plan is an ongoing and increasing cost due to the fact that company pensioners will be living longer and, thus, drawing benefits longer, especially important if earlier retirement is the alternative chosen.

Human resource managers, not substantially involved in the company retirement system, nonetheless need an awareness of the costs of retirement to the company relative to the costs and benefits of alternatives. One alternative for reducing retirement costs is the retention of middle-aged and older workers. The costs and benefits of this approach are addressed in a later section. The following two sections address other factors of the retention/retirement issue and further suggest the need to investigate retirement alternatives.

C. Inflation Factors

As a rule, individuals approaching retirement age have an income rate higher than at any other period in their worklife history. In addition to merit increases in salaries and wages, recent practice also accounts for annual cost-of-living percentages. Thus, wage increases are frequently geared to compensate to some extent for accelerating inflation rates and rising energy costs.

Retirement income, on the other hand, permits small margin for variances in costs of living in that it is generally fixed income. While it is true that social security is indexed, it serves only to provide a portion of income replacement in retirement. Nor, in an inflationary economy, is it likely that savings or other private assets will protect one's standard of living, particularly in light of prospects for increased lifespan.

Private pension income, the other major source of revenue in retirement, is almost always a fixed income source. Only 4 percent of private pensions provide cost-of-living adjustments. The effect of inflation on a fixed income source, however, can be serious. For example, the following table projects the purchasing power of a $1,000-a-month benefit given an average inflation rate of 10 percent between 1980 and 1995. The table also indicates the corresponding amounts needed to maintain purchasing power under these circumstances.

TABLE 6.—LONG-TERM EFFECTS OF INFLATION ON A $1,000 PER MONTH PENSION

Year	Purchasing power in 1980 dollars	Current dollars needed to maintain buying power
1980	$1,000	$1,000
1985	620	1,613

TABLE 6.—LONG-TERM EFFECTS OF INFLATION ON A $1,000 PER MONTH PENSION—Continued

Year	Purchasing power in 1980 dollars	Current dollars needed to maintain buying power
1990	390	2,564
1995	240	4,167

Source: Leonard Lecht, "Changes in the Labor Market Status of Older Workers in the 1980's: Implications for Economic and Educational Policy," March 1980, p. 11.

These projections suggest that the older worker might be well advised to defer early or even normal retirement; the middle-aged worker may postone labor force exit decisions. After all, why think about retirement yet, when income security is so doubtful? Concern about inflation has been voiced:

> * * * both by individuals who had retired on incomes of $10,000 and also by those with annual incomes in the $60,000 range. The effect of the inflation in the 1970's for these employees had frequently been to induce them to postpone their retirement for several years in the expectation of building up larger pension reserves and, probably, to allow them to wait and see what would happen to the inflation rate. (Lecht, 1980.)

Inflation, therefore, can leave both management and long-term workers in the hole. Workers may not be able to retire, or plan for retirement, on their expected schedules and management may not be able to retain them on traditional compensation and benefit increase schedules.

The fact of the matter is that company resources are finite. Human resource managers and benefit managers may have to devise new compensation and benefit schemes to help resolve the problem. One indication that this is possible is the negotiations between automotive industries and labor unions. Although many other economic factors other than inflation are involved, management, organized labor, and workers are searching for new schemes to retain job security by compromising on traditional increases in wages and benefits. The argument is the same in the long run—a company has limited resources and both parties (i.e., management and long-term employees) may have to work out new solutions. It is not suggested that any solution is easy, especially in view of traditional retirement policies, pension plan terms, and a variety of Federal statutes which would have to be dealt with.

D. EMPLOYMENT PROTECTIONS

Another consideration which human resource managers need to be aware of is that retirement policy is no longer the unilateral prerogative of companies. Nor can personnel managers deal with long-term workers in any way that could suggest an adverse impact upon them due to their age. The Age Discrimination in Employment Act (ADEA) is meant to provide workers ages 40 to 70 a degree of protection from unintentional or arbitrary age bias actions within the company personnel system. More specifically, the ADEA protects the "* * * compensation, terms, conditions, or privileges of employment * * * " of middle-aged and older workers (Age Discrimination in Employment Act, 29 U.S.C., 621 et seq., 92 Stat. 189. 1978). Thus, while it is true that popular attention has been focused on issues associated with labor force exit, the principles of this act apply to all areas of human resource management. The following three cases illustrate this point.

In the instance of *Marshall* v. *Goodyear Tire and Rubber Co.* (22 FEP Cases 775, WD Tenn., 1979), the issue was one of hiring practices for production-line jobs. The plant involved in the proceedings had a stated policy and practice of refusing to hire workers over 40 years of age on the grounds that, after age 40, a worker would not be able to meet the strenuous demands of the jobs. Over 500 prospective applicants who were protected under the ADEA joined suit against the company alleging that age, in effect, was a surrogate for excluding these individuals for consideration. After suit was joined, the company claimed, additionally, that workers over age 40 would be less productive and that, therefore, the company would suffer unduly. In the course of the litigation, a wealth of medical data was introduced and components of the company's personnel system—performance factors, job descriptions, and hiring procedures—were reviewed in evidence. The applicant-plaintiffs were upheld, however, because a similar Goodyear plant not only hired workers over age 40, but the performance evaluation records of these employees were as good as, and sometimes superior to those of the younger employees in that plant.

From the manager's viewpoint, then, the positive lesson to be learned from this case is that age, of itself, does not restrict performance or worker productivity and that older applicants should be given a fair opportunity to enter the company work force.

In *Mistretta* v. *Sandia Laboratories, Inc.* (15 FEP Cases 1690, ED N. Mex., 1977), long-term high technology professionals brought suit against the company to determine if a reduction-in-force action (RIF) had violated the ADEA. Sandia, a large research and development company, faced personnel cutbacks because of economic considerations. Well over 250 employees, for the most part at the senior level, were designated to be terminated. The great majority of these happened to be in the 40 to 65 age range. Over 200 of these middle-aged and older workers joined suit alleging violations of their employment protections under the ADEA. The plaintiff employees claimed that the RIF was based on age rather than performance or other objective criteria. The company denied the charge and litigation was joined after conciliation efforts failed.

The Federal district court ruled against the company. Evidence demonstrated that the [illegible] selection process was based on insufficiently objective criteria. The company lacked both adequate job descriptions for the workers under consideration and performance appraisal records which might have justified the action regarding the workers in question. The RIF was accomplished through a series of supervisory and management recommendations which introduced many factors unrelated to the work and which, in some instances, were contradictory respecting the merits of individual employees. In fact, final decisions on separation were made by top management four levels above and removed from the workers in question. Moreover, the statistical evidence was such that the large proportion of middle-aged and older workers selected for the RIF simply could not have happened by coincidence. Ancillary evidence regarding other components of the personnel functions (e.g., hiring, training, and development) served to establish what apparently constituted a companywide trend of age discrimination. In ruling against the company, the judge concluded:

> The evidence presented is not sufficient to prove or disprove the contention that at Sandia performance declines with age, but there is sufficient circumstantial evidence to indicate that age bias and age-based policies appear throughout the performance rating process to the detriment of the protected age group. (16 F.E.P., 1690, D.N.M., 1977.)

This case may be considered an extreme. Most companies have some standards for making performance appraisals. The lesson to be learned by management here, however, is twofold. First, highly subjective performance appraisal procedures regarding middle-aged and older workers are not acceptable in Federal courts. Second, without remotely objective standards, management cannot make sound evaluation decisions and stand to lose experienced and productive workers as a result of ineffective and subjective ratings.

Gill v. *Union Carbide, Inc.* (368 Fed. Supp. 364, ED Tenn., 1973), is also an example of employee termination, although the circumstances—and the outcome—of this case stand in contrast to *Mistretta*. In *Gill,* four former employees charged that the company violated their employment protection under ADEA because they were terminated. The defendent-company, however, introduced its performance appraisal system and worker evaluation records to demonstrate the basis for the termination decisions. On this evidence, the company's position was upheld.

In *Gill,* four essential characteristics of a company performance appraisal system are illustrated positively according to Federal district court findings. The appraisal system was reasonable in that the evaluation procedures related logically to the work being done. In was fair and comprehensive in that, allowing for occupational differences, the procedures were applied regularly to all employees without favor to any particular group. Finally, the performance appraisal system and its applications to specific jobs had been communicated to all of the workers.

These particular cases are referenced because they are suggestive of the basic interrelationship existing among the various segments of the personnel system. The age cases are not simply a question of work force entry or exit. Even though a case may develop as a result of a hiring or termination action, in litigation, the practices of each of the components of the personnel structure may become important by either supporting or detracting from the company's position. There are also broader questions involved:

—Litigation is an expensive and time consuming proposition. Is the company in a position to make this kind of negative and burdensome commitment?

—Second, should the company's personnel policies and practices be determined in the courts, away from the influence of company management?

A third question has to do with the company's image. This is an important consideration both with respect to the company's relations within the local community and with respect to the company's relationship with its other employees not involved in the litigation.

It appears that, in the absence of perceived fair treatment, middle-aged and older work force participants will use the ADEA as a means of employment protection. The Equal Employment Opportunity Commission, which assumed responsibility for the ADEA in 1979 from the U.S. Department of Labor, has reported an increase of 83 percent in the numbers of complaints filed under the ADEA at the end of 1981.

Blacks, women, and other groups have made inroads to the labor force through civil rights litigation under title VII of the 1964 Civil Rights Act. It may be that the same types of patterns will hold for middle-aged and older workers. Certainly the four component characteristics attributable to the Union Carbide performance appraisal system have established relevancy in equal employment litigation (Schmidt, et al., 1981, among others).

Also, age-based employment protection is not limited to the Federal level. Many States have statutes similar to the terms of the ADEA. By State, the extent of protection varies, however; and managers may want to verify any pertinent State-level protections regarding worker age.

Today's middle-aged and older workers have never been regarded as much of a problem. They are expected to retire more or less on schedule (i.e., at ages 65 or 62). Yet the above factors suggest that expectancies on both the parts of management and workers are subject to change without notice. Retirement decisions are no longer strictly in the hands of management. On the other hand, management may seek to control the rates and flows of early and normal retirement. It appears that new thinking is required on the management of human resources which takes economic limitations, changing demographics, and new views on utilizing long-term employees into consideration. Human resource managers, then, need to take these changes into account and work out the ways and means to adjust company policies to accommodate them. The following sections explore some of these ways and means.

Chapter 4

HUMAN RESOURCE DEVELOPMENT AND MIDDLE-AGED AND OLDER WORKERS

Previous sections highlight demographic and economic trends and problems which companies may well encounter in dealing with long-term employees. This section explores positive approaches and planning guides which can help human resource managers begin to manage age factors within their companies. There are, of course, no prepackaged solutions for managers. Industries, companies, and existing personnel policies are simply too diverse to allow such approaches. Managers can examine, however, the following positive approaches and suggestions and apply what is valuable and fitting to their own company needs.

A. Toward Positive Solutions

The first step toward solutions is greater awareness on the part of management that their long-term workers can continue to be productive members of the company and that, for demographic and economic reasons, some accommodations will have to be made in the not too distant future. The analysis of the national labor force and the projections suggest an initial step. Human resource managers can determine the current age structure within their company and its various occupational lines and make estimates for the future, taking aging into account. Chart 1, which shows the flow of worker groups over time by age, can be very helpful in this regard. Managers can then examine overall personnel and retirement policies to see whether these are flexible enough at present to provide training and development for middle-aged employees and retention options for those at or approaching retirement.

Training and development may not always be the answer. Some workers may simply choose to continue at a certain job until retirement and some may want only to retire as early as possible, especially blue-collar workers in heavy industry. Sometimes a lateral or vertical job change may be the answer. This is precisely what management needs to find out and this is why an extensive age analysis of the company work force is in order.

When the 30-and-out-retirement option was initiated by the auto industry and the United Auto Workers, it was heralded as a breakthrough in retirement policy; but in several instances, specific plants lost cadres of skilled and experienced workers who met the 30-year standard and simply retired. Replacement became a critical problem and there were slumps in productivity until new people could be trained.

The development of early retirement options that occurred in many companies in the 1960's provides another example. Different types of incentives were developed to promote early retirement, such as lesser actuarial reductions in pensions for those choosing early retirement—as early as ages 55 and 58 in some cases—and different forms of cash buy-out packages such as the value of 2-year salary given to the retiree over a 4-year period. There were several purposes behind these policies. One was to clear out the "dead wood"—older workers who were regarded as nonproductive. A second was to open up progression lines for younger workers, providing motivation and advancement opportunities for this group. In many instances, however, valuable, highly skilled and experienced middle-aged employees took the option in order to begin second careers or pursue avocational interests (O'Meara, 1976).

Both of these examples point to the problem of developing and implementing age-related policies without fully examining the consequences of those policies. Managers may well feel that policies cannot be tailored to individual cases and that when early retirement incentives are developed, the company simply has to take a risk of losing good employees along with marginal workers. Yet, this flies in the face of some of the basic principles of human resource development. The age discrimination cases described earlier illustrate this clearly. None of the cases ever should have reached a Federal court. It was simply the lack of understanding of age factors in the personnel system that allowed negative situations to develop. A general rule not to hire persons above a certain age or a general rule to select older and higher paid workers for a RIF is bad human resource management, not to speak of being legally questionable.

Human resource managers will need to deal with longer term employees more and more on an individual basis. Finding out who they are, what their records in the company are, what their aspirations are—be it continued employment or retirement—are critical. There are illustrations of companies which have developed some policies pertaining to older workers. In fact, a casebook on positive utilization of older workers was recently published (Jacobson, 1980). The inherent difficulty in most of the cases cited is that the efforts to deal with older workers are partial. Older workers are treated as a peripheral segment of the company work force rather than an integral part of total human resources. In few instances reported in the casebook have any of the companies conducted a major work force analysis. This is not to criticize beginning efforts by companies to come to grips with the older human resource segment of their work force, but rather to emphasize the need for more comprehensive planning regarding this group.

Human resource managers often are caught up in the conflicts associated with short- and long-term planning. The day-to-day need to meet the requirements of production and of workers often obscures long-term and comprehensive planning needs. As has been noted in one article:

> Decisions affecting human resource quality should not be dealt with in a secondary, catch-up, tidy-up, reactive way. Doing so gives lower priority to personnel activities than to production, sales, or finance; results in personnel management assignments being a sentence to oblivion; and

> fosters second-rate sloppy personnel activities * * * (Skinner, 1981.)

Nonetheless, managers may find themselves having to deal with age-related issues in terms of stopgap problems—such as age discrimination litigation—or they can begin to manage them as part of the total company's resource activities. In the same vein, if longer term workers are accorded continued equitable treatment within the personnel system, then there is a greater likelihood that they will continue to be responsive to job and company needs.

B. AGE FACTORS IN HUMAN RESOURCE PLANNING

Recalling that the focus of this paper is on age factors in the human resource system, the first and most important planning element which human resource managers must consider is the structure of age in their respective firms. Unlike other human resource variables such as race, sex, level of education, work experience, etc., age is completely universal. The entire organization, divisions, or any selected production or service unit can be analyzed by comparative age structure. It is recommended, therefore, that human resource managers examine these structures in order to ascertain the different age groups participating in the company work force. The most general focus would be to classify the entire company work force into 5-year age bands ranging from youngest to oldest workers. A second, and sharper focus would be to break out company divisions and subdivisions into a similar age analysis. A third, and more important, focus would be to examine occupational lines throughout the company and within its subordinate divisions or units in a similar age analysis.

While age is the primary variable in the age analysis, management also can introduce such other demographic variables as sex, race, and length of service pertaining to company, division, and occupational structures. This type of analysis allows human resource managers a new kind of planning method. Any given occupational line can be examined by a breakout of age—range, median and mean—plus educational background, service within the company, experience within other organizations, and similarly related variables.

Human resource managers may want to also examine the age characteristics of workers in terms of retirement aspirations, which would yield important data needed to assure placement of workers and maintenance of proficiency within a given service or production unit. As has been noted, a new perspective is called for and that is the changing job, career, and retirement interests of long-term employees due to such factors as economic pressures to defer retirement, increased longevity, and, generally speaking, increased health of senior workers which may lead to their choice to extend the work option. This is extremely important, because the human resource manager may well have to look at the 50-year-old worker who, 10 years ago, would have chosen early retirement in 5 years. Now a 50-year-old may choose to work up to age 65 and beyond. Further, given the general demographics on the aging of the Nation's work force described earlier, managers may need to open up hiring procedures to include an age 50 applicant, prompting consideration of what types of employment opportunities may be available to such an individual.

Another critical age-related area for HRM's to consider is performance appraisal as it is related to training and development programs. If the performance of a 50-year-old employee plateaus or declines, this may be related to a need for training or retraining for such a worker. An age analysis of all 50-year-olds in a given company unit, according to performance ratings and allocation of training and development resources to this group, could reveal some interesting correlations. If, for example, the 50-year-old receives little training compared to workers in the same unit ages 35 or younger, it may not be that surprising that the performance and motivation of the older worker declines. If such an analysis were made, the HRM could take remedial steps and provide retraining opportunity for the more senior worker. But the real point is that remedial steps should not be needed at all. Comprehensive human resource planning can track employees as they age in the company in terms of both performance and career development to prevent such a hiatus and problem. It is not suggested that training be forced on all employees on some type of quota basis; but on the other hand, unconscious or arbitrary neglect in developing longer term workers will only create problems.

The age analysis of the work force can be applied to every area of the personnel system including those described above—hiring, performance evaluation, and career development—along with promotions, compensation, job transfer, turnover, termination, and retirement rates.

In short, what is suggested is that human resource managers must become knowledgeable about the concept of auditing the company work force by age, examining past and current development policies which apply to the distinct age groups, and developing new strategies which can utilize the middle-aged and older work force in ways that meet the needs of both the company and the worker.

C. The Need To Develop Functional Criteria

As the above discussion of the ADEA and selected cases indicate, personnel decisions based on age alone are not acceptable. The standards defined by litigation under title VII of the Civil Rights Act of 1964 support this conclusion. Employers are prohibited from exercising personnel decisions which result in an "adverse impact" on a worker due to race, sex, religion, or ethnic origins. The impact, therefore, of title VII and the ADEA on companies forces them to develop functional criteria relating to personnel decisions as opposed to chronological or other non-job-related norms. Civil rights laws, though, are restrictive. They tell companies what they either must do or cannot do. Affirmative action strategies are also restrictive with their orientation toward goals, quotas, and timetables. Companies contracting with the Federal Government are called upon to reshape their work forces to meet various legal standards. Indeed, functional criteria are needed to deal with the legal aspects of employment; but more importantly, they are needed to assess and develop human resources. It is, then, on this positive note that the subsequent discussion of functional criteria and their relationship to older, experienced workers is based.

D. DEFINING FUNCTIONAL CRITERIA

Functional criteria related to human behavior can be broadly defined as the norm or standards by which individuals exercise physical, mental, and interpersonal abilities in a successful and relatively self-dependent manner. For example, driving a car in accordance with legal requirements, the ability to balance one's checkbook, and the ability to meet reasonable family and social standards required to get along with one's family and neighbors are human behaviors within the context of functional criteria.

Jobs, however, narrow the definition considerably. For the purposes of this paper, functional criteria are defined as the norms or standards according to which workers in specific occupations exercise the range of physical, mental, and interpersonal abilities needed to meet requirements of a given job. Job analysis methods are useful for extending and illustrating this definition because, in one way or another, they define and use functional criteria as indicators of skills required to perform jobs and associated tasks.

Traditional job analysis methods break a job down to its component parts and measure these, usually on an ordinal scale, in terms of simplicity and complexity under a particular skill requirement. Physical capacities to perform a job are usually rated according to the level of strength, dexterity, etc., required to perform given tasks in accordance with the demands of a given production system. Mental capacities to perform tasks are traditionally analyzed in a similar manner. The results of these analyses allow managers to define in a fairly objective manner what the requirements of a given job are and, therefore, what the corresponding abilities of a worker are to meet these requirements. The notion of functional criteria, then, is related to these two aspects of the job analysis system. They are rooted in the job itself and the experience, training, and skill of a worker to perform such a job. As such, any bias not related to the functional demands of a job and the functional capabilities of a worker has no bearing on the selection or development of an individual worker to perform that job.

Some basic examples of functional criteria can be examined. If a warehouse job requires moving 50-pound sacks from one location to another over an 8-hour workday without the benefit of a forklift, then the functional criteria for performance are already set. A worker simply has to be able to meet the requirements of the job and an applicant for such a position, regardless of age, race, or sex, must have the physical capability to perform the job. Visual requirements present another basic example of applying functional criteria. Relatively few jobs require 20–20 vision. On the other hand, most jobs have minimal visual standards (although even these may be modified). The functional criteria for vision, therefore, are derived from the minimal requirements to perform the job. Functional visual criteria for fighter pilots are different from those of a human resource manager.

A third example, however, indicates the complexity involved in developing functional criteria and the need for more careful analysis. Recent graduates from engineering schools are often sought by companies because they allegedly bring with them new technology and motivational levels needed to succeed in competitive, high-technology industries. It is one thing however, to hire and place a young engineer in a specific company project and quite another to hire a 42-year-old applicant or to assure continued proficiency of engineers who have been with the company for 15 or 20 years. Granted that turnover, promotion, and related personnel practices will change the shape of a company work force, nevertheless, the human resource manager needs to focus on assessing and developing the skills of workers as they age and gain in years of service to the company. In part, helping to keep the engineer or, for that matter, the entire range of professionals within a company, abreast of product and technological changes is a function of human resource management. Too often middle-aged professionals are "used and discarded" at relatively early ages by means of early retirement policies. Management—consciously or unintentionally—may tend to replace "outmoded," longer term professionals with recent graduates who may provide the company with new skills. Such a cycle is costly for reasons already noted and perhaps unnecessary if functional criteria are defined and utilized by human resource managers in developing the middle-aged and older segments of the company work force. Again, it is helpful to recall some of the fundamental premises of this paper:

—Management cannot discriminate against workers on the basis of age.

—Demographic and economic forces are likely to change current employment and retirement policies regarding long-term workers.

—Experienced middle-aged and older workers can provide management with new potentials for achieving company production and profit goals.

—Traditional retirement policies, which often force some workers out of a company prematurely, need to be reexamined.

E. GENERATING FUNCTIONAL CRITERIA

The purpose of this section is to consider selected job analysis systems in order to derive criteria that can better utilize and develop middle-aged and older workers. Several points need to be made at the outset. First, although this paper emphasizes the functional job analysis system for purposes of illustration, there are other systems of job analysis that can meet the needs of a given company in developing functional criteria. Second, human resource managers are familiar with many job analysis systems and already adapt them to meet various company needs for training and developing the work force. Third, it is not the intent of this section to analyze the "behavior anchors" undergirding job analysis systems, to evaluate job analysis methods, or discuss problems of validity, or other technical aspects of job analysis rating reliability. This is done elsewhere (Schmidt, et al., 1981; Smith and Hakel, 1979, for example). The intent is to present managers with some practical approaches for dealing with longer term employees and jobseekers.

As noted, job analysis methods provide a fairly rich starting point for building functional criteria which can be used for dealing with middle-aged and older workers in positive ways. A recent study on job analysis methods, conducted by the Center for Evaluation Research, University of South Florida (University of South Florida, 1981) provides a practical starting point for this section. The study described seven job analysis methods and asked practicing job analysts to compare them from a number of viewpoints—including comprehensiveness, practicality, and how these systems related to organizational variables such as recruitment, hiring, job descriptions, performance appraisal, and EEO compliance.

This paper examines the systems covered in the South Florida study from a functional viewpoint. That is, what aspects of those job analysis systems generate functional criteria and how such criteria can help human resource managers make hiring, retention development, and retirement decisions affecting long-term workers and jobseekers. In examining the systems, functional job analysis, for reasons of comprehensiveness and illustration, is emphasized. Some of the strengths, contributions, and alternative approaches offered by the other systems are also noted.

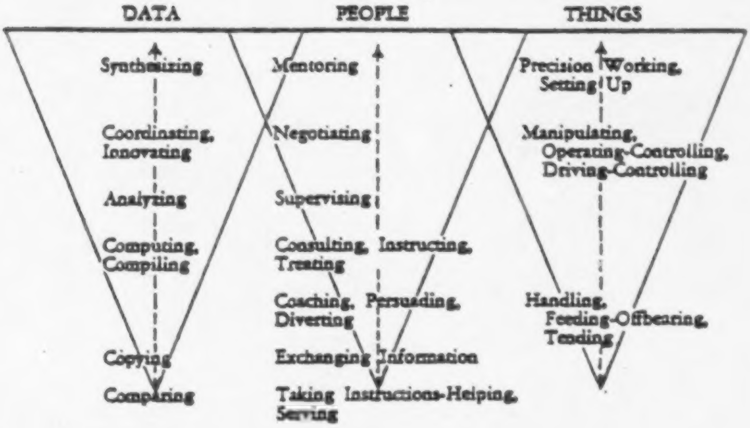
F. FUNCTIONAL JOB ANALYSIS

Functional job analysis (FJA) is a fairly well known and widely used system. Originally developed for use by the Labor Department in the "Dictionary of Occupational Titles," the system has undergone several developmental phases (Fine and Wiley, 1971; Fine 1979, 1981).

The system has two basic components. The first analyzes organizations from the viewpoint of their goals and objectives. Goals are the long-range statements which set directions for the organization. Objectives are the narrower steps required to reach the goals. The assumption is that subsequent jobs and tasks are linked to goals and objectives and, therefore, should be derived from and analyzed in this context. The second FJA component is task and job analysis.

The system is like other job analysis methods in that it defines levels of work in terms of function and arranges them on a series of scales ranging from the most simple to the most complex. FJA has the advantage that it is totally functional. It focuses only on worker operations required to perform tasks and not on worker characteristics. The first set of scales—data, people, and things—defines the series of analytical, interpersonal, and physical functions needed to execute the components of a given task. The definitions of the functions, as can be noted from the scales presented below, are the behavioral anchors for the different levels. The worker functions, therefore allow analysts to rate specific tasks according to their level of complexity. Another measure, referred to as "orientation," permits analysts to rate the extent, or proportion, of worker involvement in any one of the data, people, or things functions. The following summary chart illustrates the worker function scales and the orientation measure.

CHART II. A SUMMARY OF THE WORKER FUNCTION SCALES


DATA
PEOPLE
THINGS
Synthesizing
Coordinating, Innovating
Analyzing
Computing, Compiling
Copying
Comparing
Mentoring
Negotiating
Supervising
Consulting, Instructing, Treating
Coaching, Persuading, Diverting
Exchanging Information
Taking Instructions-Helping, Serving
Precision Working, Setting Up
Manipulating, Operating-Controlling, Driving-Controlling
Handling, Feeding-Offbearing, Tending

Note: Each successive function reading down usually or typically involves all those that follow it. The functions separated by a comma are separate functions on the same level separately defined. They are on the same level because empirical evidence does not make a hierarchical distinction clear.

The hyphenated functions: Taking Instructions-Helping, Operating-Controlling, Driving-Controlling, and Feeding-Offbearing are single functions.

Setting Up, Operating-Controlling, Driving-Controlling, Feeding-Offbearing, and Tending are special cases involving machines and equipment of Precision Working, Manipulating and Handling, respectively, and hence are indented under them.

Source: Fine, S. A., Wiley, W. W., An Introduction To Functional Job Analysis, the W. E. Upjohn Institute for Employment Research, Kalamazoo, Mich., 1971.

Since this paper emphasizes the need to develop functional criteria and their relationship to long-term workers, it concentrates on the FJA functions. A careful examination of these functions is helpful. The reader should bring an "aging" perspective to bear as he or she reviews the scales. That is, how can these points of reference help human resource planners utilize and accommodate middle-aged and older workers. The levels and their definition are critical for skill assessment, hiring, retention, and retirement. These and related issues are discussed later.

The following chart presents the definitions of worker functions according to FJA. The reader will recall that it is not the intention of this paper to present a full exposition of FJA or any other job analysis method, but rather to illustrate how the methods used may prove helpful to managers in dealing with middle-aged and older workers.

CHART III.—*Definitions of the FJA Worker Functions: Data, People, and Things*

Data Function Scale

The Arabic numbers assigned to definitions represent the successive levels of this ordinal scale. The *A, B,* and *C* definitions are variations on the same level. There is no ordinal difference between *A, B,* and *C* definitions on a given level.

Level and definition

1	Comparing: Selects, sorts, or arranges data, people, or things, judging whether their readily observable functional, structural, or compositional characteristics are similar to or different from prescribed standards.
2	Copying: Transcribes, enters, and/or posts data, following a schema or plan to assemble or make things and using a variety of work aids.
3A	Computing: Performs arithmetic operations and makes reports and/or carries out a prescribed action in relation to them.
3B	Compiling: Gathers, collates, or classifies information about data, people, or things, following a schema or system but using discretion in application.
4	Analyzing: Examines and evaluates data (about things, data, or people) with reference to the criteria, standards, and/or requirements of a particular discipline, art, technique, or craft to determine interaction effects (consequences) and to consider alternatives.
5A	Innovating: Modifies, alters, and/or adapts existing designs, procedures, or methods to meet unique specifications, unusual conditions, or specific standards of effectiveness within the overall framework of operating theories, principles, and/or organizational contexts.
5B	Coordinating: Decides time, place, and sequence of operations of a process, system, or organization, and/or the need for revision of goals, policies (boundry conditions), or procedures on the basis of analysis of data and of performance review of pertinent objectives and requirements. Includes overseeing and/or executing decisions and/or reporting on events.
6	Synthesizing: Takes off in new directions on the basis of personal intuitions, feelings, and ideas (with or without regard for tradition, experience, and existing parameters) to conceive new approaches to or statements of problems and the development of system, operational, or aesthetic "solutions" or "resolutions" of them, typically outside of existing theoretical, stylistic, or organizational context.

People Function Scale

The Arabic numbers assigned to definitions represent the successive levels of this ordinal scale. The *A, B,* and *C* definitions are variations on the same level. There is no ordinal difference between *A, B,* and *C* definitions on a given level.

Level and definition

1A	Taking instructions—helping: Attends to the work assignment, instructions, or orders of supervisor. No immediate response or verbal exchange is required unless clarification of instruction is needed.
1B	Serving: Attends to the needs or requests of people or animals, or to the expressed or implicit wishes of people. Immediate reponse is involved.
2	Exchanging information: Talks to, converses with, and/or signals people to convey or obtain information, or to clarify and work out details of an assignment within the framework of well-established procedures.
3A	Coaching: Befriends and encourages individuals on a personal, caring basis by approximating a peer or family-type relationship either in a one-to-one or small group situation; gives instruction, advice, and personal assistance concerning activities of daily living, the use of various institutional services, and participation in groups.

Level and definition—Continued

3B	Persuading: Influences others in a favor of a product, service, or point of view by talks or demonstrations.
3C	Diverting: Amuses to entertain or distract individuals and/or audiences or to lighten a situation.
4A	Consulting: Serves as a source of technical information and gives such information or provides ideas to define, clarify, enlarge upon, or sharpen procedures, capabilities, or product specifications (e.g., informs individuals/families about details of working out objectives such as adoption, school selection, and vocational rehabilitation; assists them working out plans and guides implementation of plans.
4B	Instructing: Teaches subject matter to others or trains others, including animals, through explanation, demonstration, and test.
4C	Treating: Acts on or interacts with individuals or small groups of people or animals who need help (as in sickness) to carry out specialized therapeutic or adjustment procedures. Systematically observes results of treatment within the framework of total personal behavior because unique individual reactions to prescriptions (chemical, physical, or behavior) may not fall within the range of prediction. Motivates, supports, and instructs individuals to accept or cooperate with therapeutic adjustment procedures when necessary.
5	Supervising: Determines and/or interprets work procedure for a group of workers; assigns specific duties to them (delineating prescribed and discretionary content); maintains harmonious relations among them; evaluates performance (both prescribed and discretionary) and promotes efficiency and other organizational values; makes decisions on procedural and technical levels.
6	Negotiating: Bargains and discusses on a formal basis as a representative of one side of a transaction for advantages in resources, rights, privileges, and/or contractual obligations, "giving and taking" within the limits provided by authority or within the framework of the perceived requirements and integrity of a program.
7	Mentoring: Works with individuals having problems affecting their life adjustment in order to advise, counsel, and/or guide them according to legal, scientific, clinical, spiritual, and/or other professional principles. Advises clients on implications of analyses or diagnoses made of problems, courses of action open to deal with them, and merits of one strategy over another.

Things Function Scale

The Arabic numbers assigned to definitions represent the successive levels of this ordinal scale. The *A, B,* and *C* definitions are variations on the same level. There is no ordinal difference between *A, B,* and *C* definitions on a given level.

Level and definition

1A	Handling: Works (cuts, shapes, assembles, etc.), digs, moves, or carries objects or materials where objects, materials, tools, etc., are one or few in number and are the primary involvement of the worker. Precision requirements are relatively gross. Includes the use of dollies, handtrucks, and the like. (Use this rating for situations involving casual use of tangibles.)
1B	Feeding—offbearing: Inserts, throws, dumps, or places materials into, or removes them from machines or equipment which are automatic or tended/operated by other workers. Precision requirements are built in, largely out of control of worker.

Level and definition—Continued

1C	Tending: Starts, stops, and monitors the functioning of machines and equipment set up by other workers where the precision of output depends on keeping one to several controls in adjustment, in response to automatic signals according to specifications. Includes all machine situations where there is no significant setup or change of setup, where cycles are very short, alternatives to nonstandard performance are few, and adjustments are highly prescribed. (Includes electrostatic and wet-copying machines and PBX switchboards.)
2A	Manipulating: Works (cuts, shapes, assembles, etc.), digs, moves, guides, or places objects or materials where objects, tools, controls, etc., are *several* in number. Precision requirements range from gross to fine. Includes waiting on tables and the use of ordinary portable power tools with interchangeable parts and ordinary tools around the home, such as kitchen and garden tools.
2B	Operating—controlling: Starts, stops, controls, and adjusts a machine or equipment designed to fabricate and/or process data, people, or things. The worker may be involved in activating the machine, as in typing or turning wood, or the involvement may occur primarily at startup and stop as with a semiautomatic machine. *Operating a machine* involves readying and adjusting the machine and/or material as work progresses. *Controlling equipment* involves monitoring gauges, dials, etc., and turning valves and other devices to control such items as temperature, pressure, flow of liquids, speed of pumps, and reactions of materials. *Includes the operation of typewriters, mimeograph machines, and other office equipment where readying or adjusting the machine requires more than cursory demonstration and checkout.* (This rating is to be used only for operations of one machine or one unit of equipment.)
2C	Driving—controlling: Starts, stops, and controls the actions of machines for which a course must be steered or guided in order to fabricate, process, and/or move things or people. Actions regulating controls require continuous attention and readiness of response. (Use this rating if use of vehicle is required in job, even if job is concerned with people or data primarily.)
3A	Precision-working: Works, moves, guides, or places objects or materials according to standard practical procedures where the number of objects, materials, tools, etc., embraces an entire craft and accuracy expected is within final finished tolerances established for the craft. (Use this rating where work primarily involves manual or power handtools.)
3B	Setting up: Installs machines or equipment; inserts tools; alters jigs, fixtures, and attachments; and/or repairs machines or equipment to ready and/or restore them to their proper functioning according to job order or blueprint specifications. Involves primary responsibility for accuracy. May involve one or a number of machines for other workers or for worker's own operation.

Source: Fine, S. A., Wiley, W. W., "An Introduction to Functional Job Analysis," the W. E. Upjohn Institute for Employment Research, Kalamazoo, Mich., 1971.

The FJA system provides two other sets of scales. The worker instruction scale sets the proportion of prescription and discretion associated with tasks as they involve more complex worker responsibilities. Production line tasks, for example, are heavily prescribed. Managerial tasks contain higher levels of discretion—or the amounts of self-initiated activity expected from workers in executing these tasks.

The third set of scales, referred to as the general educational development scales (GED), establish functional qualifications for task performance. The functional definitions are arranged in ordinal fashion under the categories of reasoning, mathematical, and language development.

The task analysis process works in the following manner. Analysts develop a task statement through the usual means of consultation with job incumbents, managers, and other relevant personnel. Review of appropriate written materials is also included in the process. The task is then precisely defined in terms of the expected outcome and the activities of the worker required to achieve the result. The following human resource management task serves as an example:

—Determines/decides, in consultation with management colleagues, the scope, component phases, and budget for engineering unit training program taking into account company production needs and characteristics (age differences, performance records, needs, interests, etc.) of the engineer group in order to finalize a projected 6-month training plan.

The analyst then rates the task according to its functional levels, orientation, worker instruction, and GED levels. In this case the ratings would be as follows:

Worker functions	Orientation (percent)	Worker instruction	GED
Data—coordinating	55	Level 5	Reasoning, level 5.
People—consulting	40		Math, level 3.
Things—handling	5		Language, level 5.

Further analysis yields both performance standards and task training content. The standards are derived from task results and are classified as description and numerical. Descriptive standards are more qualitative and subjective. Thus, "thoroughness, completeness, reflects state-of-the-art content" would be examples for the above task. Numerical standards, such as "plan accepted by HR vice president, plan implemented on schedule and at cost, — percent of engineers complete and benefit from plan," are definite standards associated with the task.

Training content examples are both functional and specific. Functional training would reflect planning skills, familiarity with training techniques, and related abilities needed to meet standards and perform the task. Specific content training would consist of knowing company needs, specific engineer training programs, and needs/characteristics of the engineering group. The system, then, is functional in that it is tied to the work to be done and the required activity of the worker to achieve results.

G. Relation of FJA to Middle-Aged and Older Workers

One of the most important values of any job analysis method is its universality—how it cuts across the entire work system and applies to all segments of a company work force. But job analysis methods have been given special focus in the past. In the 1960's these methods were used extensively to develop entry level jobs and career paths for minorities. The same methods were used to help women gain access to and mobility in the labor force a decade later.

Ideally, a human resource system encompasses demographic and other variables and need not focus on such a variable as age. The fact of the matter is, however, that longer term workers often have become lost in the shuffle and there are sometimes biases based on age within work and human resource management systems. If human resource management systems could be more responsive to the needs of long-term and older workers, the problems of age discrimination and retirement policies described earlier would not exist. But they do. Neither FJA nor other job analysis systems can provide all the answers needed, but they do offer approaches which can emphasize development and avoid discrimination. Some applications of FJA follow:

HIRING

Research indicated that middle-aged older job applicants tend not to perform as well on aptitude or other related employment application tests as do their younger counterparts. These tests are often pitched to individuals starting careers rather than longer term workers who have logged many years of job experience. Managers can use the functional criteria in the scales to supplement formal tests or, in fact, replace them. If a job requires functioning on the analyzing, consulting, and precision working levels on the data, people, and things scales, with a heavy orientation toward the data and things function, then careful review of past work history, projects worked on, along with appropriate interviewing to assess worker interests and problem-solving skills related to the present position can help a manager determine the skill level and value of experience of, say, a 54-year-old engineer seeking employment. The functional criteria provide an additional reference which can aid in the hiring decision.

RETRAINING, JOB TRANSFER, AND CAREER DEVELOPMENT

A recently hired middle-aged or older worker may or may not need retraining for a new position. Past experience, familiarity with the job, and overall ability will determine the need and extent for retraining. A fairly safe assumption, however, is that if the individual is hired on the basis of experience and functional capacity to meet the requirements of the job in question, he or she will be able to master any retraining that might prove necessary to execute job tasks.

The same principle holds true for current middle-aged and older employees. It may be that such workers want or need changes in their jobs or careers. Retraining, job transfer, or other developmental opportunities can be based on functional assessments of these workers and their potential to make the desired change or master a new assignment established by management.

The demands of a lateral job transfer may involve minimal skill retraining required for the specifics of the job in question. If the new position is quite different or involves a new "orientation," then a more extensive retraining would most likely be required.

Intensive career development, which may well require movement to higher functional job levels, would call for different strategies. A combination of general training and specific job requirements derived from the new position would set the course for such a program. Generally, middle-aged and older workers would be sent back to the formal educational setting with optimal success. FJA or other functional approaches can help to develop the content of other types of career development programs for these individuals. Approaches such as the discovery method, discussed in chapter 5, may be helpful in this regard. The system allows the longer term worker to utilize past job experience in addressing new tasks. The worker learns at his or her own pace and develops the information needed to master new tasks, often from a variety of sources—which may or may not include some type of institutional training.

There are, of course, no lock-step or packaged career development programs which can guarantee success in all cases. The FJA scales, however, can help career planners see that the company benefits from and accommodates to the differences in ability and past job experience of long-term workers.

RETENTION

Given the pressures of inflation and changes in mandatory retirement laws, managers need to consider retention options for capable and valued older workers who may not want to retire. Many companies are developing part-time jobs for these employees who don't want to leave but who don't want full-time work either. The problem is to determine content of the part-time jobs. Keeping such workers on at tasks which utilize accumulated skills and experience is of greater benefit to the company than assigning them lower level tasks. The worker functions in the FJA system may help managers to retain older workers at their most valuable and effective levels. Scaling down of time, rearranging schedules, and related changes in the part-time work strategy does not call for a lowering of job functions. This is too often the case under present part-time work arrangements for older employees.

RETIREMENT

An additional use of FJA criteria pertains to retirement decisions. Should an older worker, for whatever reason, be unable to function at required job levels, then final retirement must be considered. No company is under obligation to retain workers who do not meet job requirements and no company is under obligation to accommodate such individuals in its work force. Retaining less than proficient workers may appear to be a humane policy, but it is unnecessary and may undercut company productivity. Retirement decisions can be planned and retirement preparation assistance provided. As long as these decisions are based on functional criteria related to job performance, management can avoid the taint of age discrimination. Usually, retirement is worked out on a voluntary basis and is planned for by both the company and the older worker in question. But increased litigation associated with involuntary retirement suggests that managers review this aspect of their retirement system and develop objective norms for making retirement decisions.

ADAPTIVE SKILL AND LONGER TERM WORKERS

Adaptive skills make up another dimension of FJA. These consist of abilities and skills gained through life experience and which individuals usually pick up outside formal institutional or work settings. They include attitudes and styles of conduct, interpersonal relationships, and fitting into (or not fitting into) work-related and other situations. These are mentioned here because age biases against workers are often based on their supposed resistance to change. The "old dog can't learn new tricks" theme has long been dispelled as a stereotype on long-term workers—but it still operates in many human resource management systems. They are viewed as more cautious and less willing to take risks or innovate than their younger colleagues. Such views can and do affect development opportunities for middle-aged and older workers (Rosen and Jerdee, 1977).

Several points can be made. First, if long-term employees are resistant to change, managers ought to ask why. Is it company practices over the years, such as lack of training and development opportunities, that have contributed to such attitudes? Second, not all workers can innovate or take risks. If older workers—or some older workers—are cautious about change, this can be valuable. Perhaps they have learned from experience. It is realized that management cannot dictate attitude changes among employees, but it can stimulate attitude change for all age groups—younger, middle years, and older members of the company work force. In summary, resistance to change—if it does exist among longer term employees—can be the result of neglected development taking its toll over the years.

H. OTHER JOB ANALYSIS SYSTEMS

Other systems of job analysis covered in the South Florida study included critical incidents, position analysis questionnaire, the ability requirement scales, the job element method, threshold, traits analysis, and the task inventory/comprehensive occupational data analysis program. As job analysis methods, these as well as others not covered in the study, may well be as good or better than functional job analysis. Different managers with different needs in different industries may prefer to use one system rather than another. FJA has been emphasized because it offers a practical starting point in that functional criteria are already defined in the worker function scales and because the system rated well in the South Florida study. This section briefly reviews the other methods covered in the study.

The critical incident technique (CIT) has been used by human resource managers for a wide variety of purposes. It was originally designed to develop training programs for pilots. Since then, it has been used to analyze jobs and develop performance standards as well as to develop training. In job analysis, CIT focuses on incidents or events illustrating behavior that is critical to the performance of the job. In order to be "critical" an incident must occur in a situation where: (a) The purpose or content of the act is clear to the observer, (b) the consequences of the act are definite, and (c) the act is crucial to either outstanding performance or markedly substandard performance. Incidents are classified as positive or negative. Positive incidents are built into the structure of a job and emphasize proficiency. Negative incidents help to define errors and how to avoid actions which lead to them. Usually over 2,000 incidents are gathered and analyzed through the traditional means of observation, interviews, questionnaires, and other written sources. They are then organized into the essentials of a job.

The strength of CIT is that it yields much rich job-related data that focus on positive performance. A limit to the method is that it is time-consuming. Also, for better or worse the method lacks scales for classifying incidents according to skill levels.

CIT has relevance for helping managers to assess the needs and abilities of the company's longer term work force. Using middle-aged and older workers as the source for gathering incidents could prove instructive. There are, of course, no "longer term worker" incidents as such but, the value of experience in positive performance and error avoidance can be noted. Furthermore, deriving training content and the training formats that promote learning among long-term workers can also be gotten through the CIT. Without special analysis, the system does not appear to be too helpful in establishing general functional criteria for use in personnel systems in that it lacks reference points and a precise communication format.

The position analysis questionnaire (PAQ) system analyzes jobs in terms of 194 elements, or items, that are involved in all forms of work. These items include mental, physical, and interpersonal processes involved in task performance along with other work-related and environmental factors. Some jobs will contain relatively few of these elements; other, more demanding jobs will contain more.

Two scales are used to determine what elements apply to the job and to what extent. If an item applies, it is rated by one scale in the following major categories: Extended use, amount of time, importance to this job, and possibility of occurrence. The degree of involvement of each of the above in the job is then gaged on a scale ranging from does not apply to highest degree of involvement. The data is then processed by a computer to form a profile of the job which can then be compared to national standardized information on the job.

The PAQ method, like many job analysis methods, relies heavily on computer analysis in formulating tasks and determining job profiles. This brings both the advantages and disadvantages of automation. The system is helpful since it allows update and great flexibility. A limitation is that standards derived from such systems can be based more on statistics than on actual job functions. Workers can get lost in the abstract process of analysis.

The ability requirement scale (ARS) method groups a range of abilities required to perform jobs—in this case 37—under four categories: Mental ability, physical abilities, psychomotor abilities, and sensory abilities. A job or task is then analyzed on a 5- or 7-point scale to determine the relevance and degree of involvement of the ability under each of these categories. Statistical analyses are then made to determine to what extent and at what levels the four abilities apply to tasks and jobs. The emphasis on establishing physical functional ability can be of importance to human resource managers in determining criteria for assessing capabilities of long-term workers or job applicants.

The job element method (JEM) focuses mainly upon job selection procedures. Several basic functions and attributes are defined for all jobs, such as: (1) A set of knowledge, (2) a special skill, (3) an ability to perform specific tasks, (4) willingness to perform, and (5) personal attributes (e.g., reliability). The elements or subelements that are found to pertain to a specific job are defined more thoroughly and then rated on 4-point scales. The scale categories include: (a) Barely acceptable, (b) superior, (c) trouble if not considered (in screening), and (d) practical (how demanding to job). These data are then reviewed and the elements/subelements are further analyzed to determine: (1) Total value of a broad job element or lesser subelement, (2) item index—relationship of subelements to an element, and (3) training value—training content or skill level required by the element. The system emphasizes assessment of general worker abilities and job-related attributes (reliability, integrity, etc.). In this sense, it can be very useful in developing hiring and training standards for middle-aged and older workers.

Threshold traits analysis (TTA), like several of the previous methods, is built on the assumption that there are a number of broad functions which apply to all jobs. In this case the broad "areas" are: (1) Physical, (2) mental, (3) learned, (4) motivational, and (5) social. These are then broken down into 21 job functions which are further refined into 33 traits. An example is as follows: Area-mental; job function-information processing; trait-problem solving. The traits which apply to a given job are then rated on a 4-point scale to determine the level of complexity it holds. Results are fed into a computer which generates a series of reports on relevant traits required for proficiency in a given job.

As far as long-term workers go, traits can help determine the value of experience and worker attributes proven through performance. These factors can serve as constructive reference points for managers in making assessments of their abilities and skills.

Task inventory/CODAP, this last system, used extensively by the U.S. Air Force, is the most general. It deals with task-statements that cover occupational groups and classifies them according to time spent on the task. The tasks are placed into computers and several programs are developed. Analysts can take the general tasks in an occupation and make them more specific according to need. The programs permit update and new data on tasks as well as organizing/reorganizing them according to a number of variables—including training and performance criteria. With its computer technology, the system can be adapted to meet a number of needs—including those of middle-aged and older workers.

I. Functional Criteria and Physical Job Requirement

One job analysis system not included in the South Florida study, but which is particularly effective in defining functional requirements was developed and is still utilized by De Haviland Aircraft, Ltd. (Koyl and Hanson, 1969; Batten, 1973). The system, referred to as GULHEMP, combines an industrial health component with an industrial engineering component. That is, all employees, regardless of occupational status, are given annual physical examinations. The results of the examinations are translated into a physical profile of the worker's abilities under seven functional areas; general physique, upper extremities, lower extremities, hearing, eyesight, mentality, and personality.

The worker is rated on a 7-point scale ranging from incompetent to superior under each of these categories. Simultaneously, industrial engineers, in consultation with supervisors, workers, and union officials, develop a profile for all jobs and rate the minimal requirements for satisfactory performance according to the same 7-point scale. The outcome allows managers to assess changes in worker ability to perform and to make adjustments for both workers and jobs based on reasonably objective rating scales.

The system is especially effective in defining the strictly physical functional criteria associated with the jobs and, as a result of its implementation at De Haviland, job-related accidents were reduced 75 percent within a 2-year period. The ability of the plant physicians and managers to develop a range of criteria to rate the workers and jobs permits system flexibility. That is, if a worker's capability under any of the categories diminishes by one or more levels of the worker rating scale, managers can alter the job requirements, within reason, to accommodate the change. Job transfer options also emerge. In addition, the system provides criteria for separation or retirement when a worker can no longer meet job requirements and management cannot longer accommodate the job system to the worker. The following chart illustrates one category—eyesight—of the GULHEMP system.

CHART 4.—*Selected Illustration of the GULHEMP System: The Eyesight Scale*

	Scale and definition
E1	*Able to see sufficiently well without glasses for any employment, including work where good vision is the reason for employment.* Night vision and color vision—normal. Uncorrected vision 20/40 20/80. Jaegar Test Type J3 or better.
E2	*Able to see sufficiently well with glasses for any employment except where good vision is the reason for employment.* Color vision—normal. Corrected vision 20/40 20/100 or better. Jaegar Test Type J3 or better.
E3	*Able to see well enough with one eye to do work not requiring binocular vision.* Corrected vision 20/60 or better. Jaegar Test Type J5 or better.
E4	*Able to see well enough with one eye with glasses to do work except close work. No rapidly progressing disease.* Corrected vision 20/100 or better. Jaegar Test Type J7 or better.
E5	*Able to see well enough to get around with glasses and do ordinary labor.* Corrected vision 20/400 or better. Jaegar Test Type J7 or better.
E6	*Able to see shapes dimly or blind and trained.* Corrected vision: Can count fingers at 2 feet.
E7	*Severe progressive or blind and untrained.*

Source: Leon F. Koyl and Pamela M. Hanson, "Age, Physical Ability and Work Potential," 1969, p. 32.

The job profiling team may determine that level "E3" sets the visual function required for a certain job. Any incumbent for such a position, then, should be able to meet level "E3" as a minimum standard for placement in that position. The same would hold true for the analyses under the GULHEMP categories.

It must be noted that the mental and personality ratings scales would most likely be unacceptable in the United States under standards established by title VII. While the system has limitations, it can serve as an important basis for establishing functional criteria, especially relating to the physical requirements in industrial jobs (Sonnenfeld, 1978). Human resource managers may want to become more familiar with this system and explore its use in conjunction with other job analysis methods.

J. Relevance to Middle-Aged and Older Workers

There is no reason why any, or combinations, of the job analysis methods described above, cannot be used in human resource management systems to develop responsive approaches for longer term workers. All the systems, to one degree or another, attempt to define functional measures for determining work requirements, standards of performance, and worker qualifications. All address company concerns to develop a proficient work force. All operate, more or less, along the following lines:

—Work is analyzed in terms of functions or competencies that apply, in some degree, to all jobs.

—Jobs are broken down into component parts (tasks, elements, etc.).

—Jobs and tasks are analyzed under certain work-related categories according to level and extent involvement (cognitional, interpersonal, physical, social, etc.).

—Further analysis yields information on specific task requirements, performance requirements, training content, worker responsibility, etc., needed to execute tasks.

—Job profiles can be established, often with the help of a computer. Tasks can be grouped and regrouped to a variety of job clusters that meet production and service objectives. The process of job design and redesign can accommodate, within reason, the abilities and limitations of workers in achieving company objectives.

The following long-term worker, "aging" considerations, can be examined in light of the above summary:

—Age, of itself, does not diminish physical, mental, or interpersonal competencies associated with job performance.

—Experience, long-term skill acquisition, work habits, etc., can be enhanced with age. These capabilities and work habits are gained over years of service—which translates into the aging process. This process should be understood, valued, and managed.

—With elapsed time from degree or formal schooling, a worker, who also is "aging" becomes less used to and interested in formal testing that might be involved in training or development programs.

—But without training and development opportunities over a course of years in a job or career a worker can lose motivation and become stagnant and less proficient. Some kind of balance should exist between the worker's obligation to maintain his or her skills and viability in the company work force and a management obligation to stimulate and provide for skill maintenance, proficiency, and growth.

—Over the course of the employment cycle, workers age 35, 45, 55, and over may want—or need—change opportunity. There is no chronological age at which a bell rings to register such need or interest. Communication, then, between "aging workers" and management is necessary.

—Workers over age 60 may want or need job retention options in lieu of retirement. Phased retirement, special assignments, part-time work, schedule changes, etc., make up some alternatives to complete retirement.

The strength of the job analysis systems described above lies in the fact that the various technologies are responsive almost by definition to a variety of needs and interests on the part of workers as they enter and move through their middle and older years. The emphasis here is on the technologies. Job analysis cannot resolve policy level questions or whether a company chooses to respond to aging in its work force. But if a positive policy is formulated, then the technology can help lead the way to equally positive programs.

Chapter 5

SELECTED CASE STUDIES

In order to relate the job analysis strategies to practical situations, three case studies are presented. The first, dealing with Aer Lingus, the Irish national air carrier, illustrates how changing company needs led to the restructuring of a major facility and the retraining of a work force—many members of which were age 45 and over. The second study describes the General Foods experiment at Topeka which involved a systems analysis, new definitions of jobs, and adjustment and training strategies for the work force. A third case study describes the second career program used by the Federal Aviation Administration to place disqualified air traffic controllers into new jobs and careers.

The studies both relate to and ignore age factors in the different development strategies and that is their strength as well as the rationale for selecting them.

It seems that the best developmental techniques work well because they are good and not because they address the needs of any one special group in a work force. On the other hand, these techniques are sound because they are also flexible—they can respond positively to different compositions of a work force and still accomplish system goals. The reader will recognize the variety of developmental strategies behind the various cases.

A. Aer Lingus

The Aer Lingus experience is a classic example of effective human resource development (Mullan and Gorman, 1972). Because of the competition in air passenger travel, Aer Lingus management made the decision to shift its services to air cargo. As a result, company management wanted to replace an outdated cargo warehouse "shelves and forklift" system with a semiautomatic, electronically controlled storage and retrieval system and associated computerized documentation. For management, there were several considerations involved. In an air cargo warehousing operation, freight is received, processed and stored, inspected for clearance, and either picked up by the consignee or an agent or assembled for flight transport. Fully a third of the personnel at the facility were ages 40 and over, the youngest being age 25. In addition, with only one exception, formal schooling had ended for these workers at age 14. Management elected to retrain the existing work force, though, rather than attempt to start all over with new hires.

In effecting the changeover, management had three goals in mind: First, they wanted to allay the fears of the workers involved; second, they wanted as smooth a changeover as possible, without the interruptions that had plagued and disrupted other, similar changeovers to new technology; and third, they wanted the existing work force retrained to be as competent with the new system as they were with the old.

Accomplishing these goals required careful preparation and procedures. Job content and design were studied to see how they would be changed by the new technology. Information was collected by observation, by input from cargo management and the systems planners, and by interviews with the workers.

Simple, ongoing communication accomplished several purposes. The idea of the new system was introduced well in advance of the actual changeover. This was important so that the participants could get used to the idea of change. In the course of the project, workers were asked to identify elements of their existing positions with a view toward retaining preferred elements insofar as was possible with the new technology. This was important because the system designers needed job content data from the workers; but it also had the effect of involving them in the changeover process. In addition, the workers were able to express their individual concerns and apprehensions. This was also important. As training progressed, these concerns could be dealt with. In the technical areas, for example, the longer term employees were particularly fond of forklift driving but there would be much less of this under the new system. On the other hand, manipulation of complex machinery was viewed by the workers more favorably than manual movement of the freight. Opportunities for problem-solving would be about the same; but the types of problems were different. The new system improved communications, but there were fewer opportunities for informal contact between workers.

There were also concerns about prestige and status. The longer term workers were concerned that they might not be able to master the new technology (e.g., the stacker control console) and, therefore, could lose out in pay or status. Younger workers were worried that the more difficult (and, therefore, more prestigious) tasks would be taken over by the older group so that they might not have a chance at any regrading possibilities. Both of these groups wanted new hires to remain pretty much in "apprenticeship" status.

The transition to the new technology at Aer Lingus had its basis in functional criteria. Job content was changed, requiring job design to be altered and new standards applied. In retraining, the primary consideration was the functional ability of the workers to do the jobs. But functional ability also related to the acquisition of new knowledge and skills. The method of training, then, was recognized as being essential to the success of the changeover.

Actual training coincided with installation of the new equipment. Simulations were used extensively in the training exercises and the actual equipment was used as it became available. The training process involved a number of characteristics with applications for training middle-aged and older workers:

—Training was started very early so workers would have ample time to learn the new procedures. As much as possible, workers were trained with their age peers, with older groups trained first in order to acknowledge seniority and status.

—From the beginning, it was stressed that this process was very unlike the traditional education process. Training was conducted in stages consisting, in the main, of increasingly complex, problem-solving exercises with frequent review sessions in order to provide feedback. Each stage required more detailed information with more demanding training exercises. It should also be noted that every effort was made to circumvent the need for memorization.

—Workers had clear evidence of progress at every step of the training process. In addition, all learning situations were designed to be highly participative.

The systemic consequence of each activity in the simulation exercises was emphasized. Workers traced the results of their decisions and actions and were able to recognize the cumulative nature of the problem and the interdependent nature of their work.

The Aer Lingus model is a fairly sophisticated approach in a limited situation. There are some major points for human resource managers to consider from the experience:

—The systems approach taken by Aer Lingus management in retraining the given work force to a new facility is most important. Workers seem to learn best when they see all the parts fit into the whole and how they, themselves, will contribute to the system and to its parts.

—Training was developed and carried out in ways that did much more than simply convey the information. It was equally important that the workers came to believe they could learn and handle the new system. The changeover was anchored in effective and ongoing communication, worker participation in the transition process, and active discovery learning which built on previous knowledge and experience allowing for different age groups (Belbin, 1969).

—Technological change takes place within a social context which includes the experience and skills of workers; but also includes apprehensions about adapting to a new situation, new company requirements, and learning a new job system.

Finally, while the Aer Lingus model may not be transposed as is for use in another company, it seems to offer sound principles for the training and development of middle-aged and older workers.

B. GENERAL FOODS—TOPEKA

In the late 1960's, before most job analysis systems had begun receiving popular attention, the Gaines Pet Food division of General Foods authorized the design and development of a new plant in Topeka, Kans. (Lazer and others, 1980; Ketchum, 1969). This was to be a straightforward vertical plant operation; which is to say, the raw materials were to be received, processed, packaged, and warehoused for shipping. But, from the outset, a different human resource management technique was built into the system so that the jobs were not stratified. Workers were not limited to certain tasks or assigned to certain stations. Instead, they were grouped into teams and trained to perform a large series of tasks on a rotating basis with maintenance, quality control, and methods analysis all included in each team effort. In terms of required skills, scope of work, level of involvement, and effort, team members were as balanced as possible to minimize any formal or informal hierarchy. Each team developed its own weekly work schedule, which was based on rotation so that no member was stuck at lower level, onerous tasks for long periods of time. Similarly, the members shared the higher level and more interesting tasks on the same rotational basis. This approach also permitted task trade-off, if necessary, and accommodation to specific problems without interfering with team performance.

The teams were also rotated throughout the plant, a design aspect calling eventually for multiple and high-level skill acquisition on the part of the team as a whole and for individual team members. As an integral aspect of this approach, each team undertook increasing responsibility for the team assignments, generating accountability for efficiency, product quality and cost, and reliability. One other unusual feature of the Topeka plan was the single job classification and pay rate structure throughout the plant. This facilitated rewarding workers quickly as they learned and mastered higher level tasks. Workers as well as management were totally aware of the goals of production and the steps necessary to achieve these goals.

Motivational and self-management functions for the teams were strengthened in many ways. Among these was a program which allowed any team or team member to call a meeting, which would be scheduled after shift hours, in which problems could be discussed freely and resolutions worked out. The workers were paid for any time spent at such meetings. The need for management and supervision decreased as the teams became more and more self-accountable.

The Topeka model is a systematic approach to production formally or informally defining every segment of the work or task involved. Within the limits of a vertical plant, the system used at Topeka allows the greatest possible range of flexibility for workers. It offers management a means of looking at work which accommodates the skills and interests of the worker while meeting production goals. The process is not related to anything else except the needs of the job.

A human resource manager can see how this model, or parts of it, can be useful in accommodating the needs and interests of middle-aged and older workers. To be sure, just as there are no specific jobs for "minorities" or "women," there are no specific jobs for middle-aged or older workers. There are simply jobs and tasks to be performed to meet company needs. But because the jobs are broken down into tasks which have their specific performance standards and, therefore, training content to meet the standards, managers can use this method for training or retraining workers, including middle-aged and older workers. They can use the method to redefine jobs not to accommodate a worker because he or she is old, but to assure that the worker is contributing at his or her highest level. The Topeka experiment placed little, if any, emphasis on age differences. It was the approach, the flexibility, and worker motivational factors that counted most and which offered a sound strategy for management to consider in addressing the needs and potentials of all age groups in a given work force.

C. THE AIR TRAFFIC CONTROL SECOND CAREER PROGRAM

The second career program sponsored by the Federal Aviation Administration (FAA) for air traffic controllers provides another model for human resource managers in retraining and career development for longer term employees (Batten, 1978; U.S. Department of Transportation, 1970). This case study will focus on the constructive aspects of the program and its utility for human resource managers.

Studies had found that the increasing volume of air traffic at larger airports resulted in higher levels of job-related stresses, both physical and psychological, for air traffic controllers. In fact, growing numbers of relatively young controllers (e.g., 10 to 15 years of experience) were not able to pass the required periodic physical examinations and, therefore, were not permitted to continue on active duty. The second career program was devised and enacted by Congress as a means of phasing these individuals into other careers as an alternative to simple dependence on pensions and disability benefits.

The guiding principles of the program were as follows:

(1) The controllers who were disqualified would be provided with vocational counseling and retraining required to achieve a second career.

(2) The second career participants would enter into an agreement with the Government to define and implement their second career goals.

(3) The Government assumed the responsibility for maintaining the participants at their controller salary levels and would assume all the costs involved in either technical and institutional training or on-the-job training which might be required, including necessary purchase of tools and equipment.

(4) The agreement between the Government and the participants took the form of a contract in which the career change steps were laid out, including the training activity required and the related costs. The agreement was signed by the controller, who assumed the responsibility to complete the program, and a Government representative, to guarantee the Government's role in cost underwriting.

Vocational testing and skill assessment were conducted as the first component of the program in order to help the controller focus on a second career compatible with his interests and abilities. In many cases, this assessment consisted of formal, traditional vocational testing. This type of skill assessment did not work well because it failed to take into account the fact that the controllers involved in the program were, for the most part, over age 40 and, therefore, the relevance of such testing was diminished. Most vocational assessment instruments of this type are meant for younger groups—high school or college graduates. The second component consisted of either formal and institutional second career training or on-the-job experience. That is, a controller who desired a more technical position, such as in computer programing, could enroll in appropriate training institutions in order to gain the background and credentials needed for that occupation.

Controllers also could choose an on-the-job situation, working for an employer to gain the skills needed for a second career by direct experience. On-the-job experience tended to be quite productive for the participants. They had the opportunity to translate functional skills gained from their experiences as controllers to the functional requirements of their new positions. One area in which the controllers proved quite successful in skill conversion was sales. A major requirement for air traffic control is language precision. This functional ability could be translated readily into the requirements of sales.

A third component of the program was monitoring. That is, as in any sound contractual agreement, both parties can and should be monitored. Thus, the FAA required periodic assessments to monitor the progress of the controllers in their second career initiatives. In some instances, a controller would find that a change was appropriate or additional training needed in order to enter the desired job or career. The Government, within limits, permitted such changes as long as these were related to achieving the overall goal of the program—placement in a new job. Likewise, the controller could monitor Government activity in providing the supports (tuition payments, etc.) that were part of the original agreement.

The model described here is relevant to human resource managers in several ways. First, there are many occupations which often involve psychological or physical stress. The engineering profession is a case in point. Due to the requirements of maintaining technical proficiency, engineers have to keep up in their field and learn new technologies as they are developed. This levies a double stress. First, they have to maintain job proficiency; and second, they have to upgrade their job skills as their companies move into new types of technological production. The second career model, along with different variations of it, offers human resource managers ways to both develop needed skill conversions and to train employees for new occupations within the company, or elsewhere should their specific technical backgrounds no longer be required.

The model also has larger applications throughout a company in maintaining and developing the skills of middle-aged and older employees. The strength of the air traffic controller model lies in its structure as a contractual agreement between two parties with specific terms and given time frames. The controller or any adult worker is familiar with contractual agreements and often commits in this way over the course of a lifetime. Relating this structure to job retraining or career development provides a familiar method for transacting business. In addition, it provides a longer and more realistic period for retraining and job and career change, allowing the individual sufficient time for adjustment and development. This takes into account the facts noted in the previous Aer Lingus study—older workers can learn as well as their younger counterparts but it may take them more time to do so.

D. IMPLICATIONS OF THE CASE STUDIES

The above case studies are examples of how to deal constructively with aging as a factor in both human resources development and company production goals. In Topeka, systemic job restructuring and training were used in ways that included the entire plant work force. The experiment at Aer Lingus cargo terminal centered on retraining the existing work force, including middle-aged and older workers, because of the introduction of new technology. The third instance was the second career program established for air traffic controllers. Here, the purpose of the program was to provide the means to productive employment for controllers who had been withdrawn from active duty.

The workers at Topeka had to learn the entire production system as opposed to one job within the system. The workers at Aer Lingus learned the same thing—the relationship of their own jobs and tasks to the entire containerized freight system. In both cases, management developed expanded and flexible methods for utilizing the worker resource which resulted in increased productivity. Differences among the work force based on age or other demographics had the effect of being minimized. The systems worked precisely because they related the functional capacities of the workers to perform a wide range of tasks within the production system.

The Topeka and Aer Lingus examples illustrate great flexibility within the constraints of fairly restricted production systems. There is nothing very stimulating about dog food production or a containerized freight operation. Yet, within defined boundaries, the human resource managers made significant changes which had positive effects on company needs and worker motivation. If these approaches can work in these rather limited company operations, they also may have great potential for a broad range of occupations which are not as restricted by means of production. Thus, forms of technical, professional, and white-collar work also could benefit from the basic approaches utilized in the two case studies.

The air traffic control model is different from the other two studies in that it sought to bring about skill conversions outside of an organization. The workers were retrained to assume jobs and careers in different occupational areas. Managers can see that the contractual methods used in the second career model could well be applied within a company and achieve different forms of career growth and utilization for longer term employees. It is the method of the second career program and its guiding principles that can be adapted to the needs of the company.

The limitations of these studies are that they cannot be applied ready-made in other industries or companies because all "cases" are different. The underlying principles and approaches, however, do offer human resource managers new values and considerations which can be introduced into their own company settings. The strength of the case studies, then, lies in the fact that management analyzed its own needs, defined positive human resource technologies, and applied these. The systems analysis and job redesign technologies utilized at Topeka and by Aer Lingus, along with the second career strategies in the air traffic controller program are not all that new or revolutionary. Human resource managers are familiar with the techniques and approaches used in the different cases. What is different is that the technologies were thorough and responsive and could assimilate the differences among age groups as the changes occurred. Most industries, apparently, are not quite prepared to utilize these strategies on an age-free basis as yet. It will be important, therefore, for managers to recognize age differences in developmental strategies and programs—if for nothing else than to eliminate age biases from those efforts.

Chapter 6

AGE, PRODUCTIVITY, AND HUMAN CAPITAL

Although managers may begin to realize the need for more responsive programs regarding long-term workers and further recognize that the human resource technology to make positive adjustments is available, some serious questions remain. The first has to do with performance and productivity of middle-aged and older workers. The second has to do with the costs and benefits of developmental programs. The first part of this section, then, discusses age and productivity; the second addresses some human capital concerns.

A. AGE AND PRODUCTIVITY

It is difficult enough to determine adequate standards for assessing the productivity of any group of workers—not to speak of middle-aged and older workers. Moreover, the traditional belief that productivity declines with age due, in part, to the competitive pressures of some occupations, knowledge or skill obsolescence, or declining physical capacity or stamina compounds the problem. While there is no ongoing, systematic body of research on productivity and age, most of the information available indicates that middle-aged and older workers perform generally as well or somewhat better than their younger counterparts.

For example, the U.S. Department of Labor conducted three surveys a number of years ago to assess the relationship between age and productivity (U.S. Department of Labor, 1965). The first of these surveys was conducted from 1955 to 1957 in the footwear and household furniture industries. The results indicated that productivity decreased slightly after age 45 and only somewhat more after age 65. The major conclusion, however, was that there existed a broad range of productivity levels within age groups. In the second study, conducted in 1958–59, the performance of clerical workers was evaluated. Findings in this instance also indicated a wide range in productivity within age groups and, further, that there were no significant differences between age groups. In fact, those ages 65 and over had equal accuracy and greater consistency of output than younger office workers. Federal mail sorters were surveyed in 1961. The results here indicated that consistency of output rose by seniority of group. More recent studies conducted in New York State agencies in 1972 have tended to support the U.S. Department of Labor finding that there is no significant difference in productivity by age group (New York State Division of Human Rights, 1972).

Specific aspects of age and productivity have also been researched. Taylor, writing in the "Personnel Journal" (1969), has noted that older workers participating in creativity development programs in business perform more successfully than their younger counterparts. A review of some of these programs suggests that younger workers tend to "reinvent the wheel" while 80 percent of the most usable and worthwhile ideas come from workers over age 40. Other studies have addressed the relationship between age and risk-taking at the managerial level (Vroom and Pahl, 1971; Taylor, 1975). Among other findings, these studies suggest that the long-term managers may be less willing to take risks than their younger counterparts, tending to be more cautious and thoughtful.

Other studies have addressed other aspects of productivity in relation to age (Meier and Kerr, 1976). For example, older workers may be more reluctant to undertake training; yet, once trained, they tend to stay with the company longer than the younger workers. Another study indicates that prospective workers tend to seek jobs they are physically able to perform and that middle-aged and older individuals can perform jobs for which they might not have been considered because of age.

More recently, Fordham University has conducted a research study on productivity and older workers working in human services agencies in New York City (Fordham University, unpublished). The major conclusion of the study is that older workers placed in positions involving previous job skills are more productive, as viewed by their supervisors, than older workers not placed in jobs related to prior experience or skills.

It is sometimes argued that the productivity assessments that have been done are inconclusive—they really neither confirm nor deny the question of worker capability and age. Support for this view arises from the fact that the U.S. Department of Labor studies are out of date and clearly require more current information. In addition, studies addressing specific aspects of productivity and age tend to be limited to the situational rather than more comprehensive approaches. On the other hand, most of the studies thus far do reflect favorably on aging and productivity in general and represent a starting point from which to consider middle-aged and older worker potentials.

The validity of traditionally held beliefs needs to be reexamined given the likelihood of increased numbers of longer term workers in the labor force over the years to come. Predictions of future performance by workers will have to be made with care and with an eye toward maintaining or correcting performance rather than with shrugging acquiescence. When it comes to making retraining investments in longer term workers, managers simply will have to know what the benefits of such investments are likely to be in terms of proficiency and productivity of the workers in question.

Norms for evaluating the productivity of workers, including middle-aged and older workers, vary from industry to industry and company to company. Some of the general categories that might prove helpful to managers in dealing with the issue of productivity are:

—Physical capacity, e.g., strength, stamina, dexterity, general health.
—Job performance, e.g., work volume, quality of work.
—Performance in training, e.g., learning abilities, time factors.

—The value of long-term experience and skills in the work force.
—Work attitudes and motivation, e.g., judgment, loyalty, dependability.
—Other factors, e.g., absenteeism, relations with supervision, coworkers, management.

Admittedly, the above norms are general and companies will have to adapt them to their own needs. It has been noted that the performance of workers within a given age group varies widely and that productivity assessments of middle-aged and older workers as a whole are difficult. Managers need to deal with their long-term workers on an individual basis. The goal should be to assess and assure proficiency rather than allow individuals to drift into retirement. Aside from mounting costs to the company's pension plan, the total costs of these individuals in the retirement dependency group is another burden to corporate taxes. Retaining long-term workers can be beneficial to companies and the economy as a whole.

B. AGE AND HUMAN CAPITAL

The second question raised in this section addresses the issue of training long-term workers from the standpoint of costs and what, if any, benefits companies might expect from such investments. The question is hard to answer because relatively few companies have experience in training these workers. A human capital approach can be helpful. According to this perspective an individual acquires basic human capital—the skills, knowledge, and competencies that produce income—in various learning situations during the younger years. The higher the level of education and training (secondary, vocational, professional schools, etc.) the greater the "stock" of human capital gained. Although earnings are foregone—for the most part—during this period, the subsequent benefits in terms of increasing income will amortize the "debt" or cost of generating the human capital.

The aging process, however, raises a number of considerations. When does a worker's human capital "stock" begin to decline in value to a company? What are the limits for retaining, renewing, and expanding human capital as workers move to and through ages 40, 50, and beyond? These are very practical matters—but there are additional considerations:

—Real or alleged declines in performance for middle-aged and older workers may be due, in part, to lack of training opportunity to maintain or upgrade skills and knowledge.
—If more senior workers don't receive a fair or proportionate share of the "T. & D." resource this could be viewed as a type of age discrimination.

There are some reasonable approaches that can be taken by managers. First, as noted in chapter 4, training and development may not be the best answer. A worker may want to simply put in his or her "time" until retirement eligibility; sometimes a transfer may be the answer if the problem is understood to be related to job boredom or lack of challenge. Other strategies are referred to in the case studies. Second, management is not wholly responsible for continuously educating and training workers over the course of the employment cycle. Workers move through organizations in different ways. They enter companies, gain experience and promotions, leave one company and join another, etc. Companies can hardly monitor the process—not to speak of the training aspect of it. Yet such an effort must be made if management chooses to "manage" age variables. The age audit process noted earlier suggests one basic approach. An analysis of the allocation of company T. & D. resources by selected age groups within specific occupations (technicians, engineers, etc.) by company units or divisions will reveal any imbalance that might exist. For example, it would not be surprising to find that many blue-collar workers would not take training options even if available.

The trends toward and desire for early retirement for this group are well established. But lack of participation by technical and professional workers aged 45 to 50 or 55 raises other considerations. Such individuals may be "too busy" with current work assignments to take training, or they may be perfectly capable of maintaining and upgrading their skills on their own. On the other hand, management simply may be overlooking the needs of this group. The point is that there are a variety of reasons to monitor aging and training within company and managers can't be aware of them unless they look.

Third, managers should examine the kinds of T. & D. programs sponsored by the company in terms of what age groups participate. Broad tuition support for continuing education may or may not be career related or may show significant age differences among participants. But training programs which are essential for the company to maintain its competitiveness—e.g., seminars, courses, in-house training on new technologies or marketing techniques—present a different matter. If long-term workers are not reasonably represented in such programs, this could suggest a tacit management policy that they are neither needed nor wanted. There could be potentially serious problems in such a case, suggesting the need for careful review of both company policies and practices.

Fourth, management should reassess the general investment payoff concern regarding training and long-term employees.[1] No one expects a manager to make a 6-month training investment in a 62-year-old worker who intends to retire within 2 years. But the 50-year-old with a potential worklife of 20 or more years presents a different matter. The human resource management system needs to be responsive to individuals as they age in company service. The type of training, extent, and expected outcomes in terms of cost can be worked out on an individual basis. The air traffic control program described earlier serves as an example. Individuals and the employing organization established objectives, costs, and expected outcomes. Both signed an agreement beneficial to each party. Variations on such an approach can serve as a practical step toward dealing with middle-aged and older workers in positive and cost-related ways.

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[1] A note on compensation and benefits:

One concern of management on the cost of investing in long-term workers is that they are already heavily invested in. Salaries go up over years of service, as do pension obligations and other benefits. The "marginal value" of the long-term worker, or his or her contribution to productivity and profit after salary and benefit costs are taken into account, allegedly declines as salary and benefit costs increase over the years. The question of further investment arises. Why make training investments when the older worker's marginal value will not increase?

This is a legitimate but general question which can only be answered on an individual basis. It also suggests that compensation and benefits have a close relation to the utilization or nonutilization of longer term workers. Perhaps compensation and benefit policies need a total reassessment in the likelihood of extended employment for middle-aged and older workers. Alternative compensation and benefit policies, however, are complex matters and the subject for further detailed analysis beyond the scope of this paper.

Chapter 7

CONCLUSIONS AND RECOMMENDATIONS

What follows is a series of recommendations for human resource managers.

A. CONDUCT AN AGE ANALYSIS OF THE COMPANY WORK FORCE

There are two key dimensions required to develop an adequate company age profile. The first reflects the structure of age in the work force; the second reflects the dynamics of age operating within the company and practices.

THE STRUCTURE OF AGE

The total company, any organizational unit, and any occupational or skill line can and should be analyzed by 5-year age bands ranging from the youngest to the oldest worker groups. Age should be regarded as the key variable but include others, such as sex, race, years of service, educational background, etc. Points for comparison are past company age profiles, national and local labor force data related to age, and similar information from comparable industries. The resulting profiles will show how—and if—the company work force has aged over a period of years and where the work force may be heading.

THE DYNAMICS OF AGE

A review of age distributions in hiring, placement, promotion, salary administration, training and development, termination, and retirement rates over a 3-year period will prove instructive. Regardless of what stated company policies and programs are, this analysis will show how age factors are operating within the company whether management is aware of them or not. The structure and dynamics of age are based on total and complete data. This analysis sets the base for subsequent considerations.

B. REVIEW FEDERAL AND STATE AGE DISCRIMINATION STATUTES

Most large companies have EEO divisions, which, along with general counsel, monitor appropriate Federal and State laws to assure company compliance and resolve problems. The age laws contain specific age-related standards to which organizations must adhere. Admittedly, such standards are negative, but they can serve as a starting point to make an assessment of the company's age profile and policies. Many EEO officers and company attorneys are more familiar with title VII requirements than they are with age discrimination laws. Training should be provided in these areas. Human resource managers would also want to become familiar

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with the laws and major cases and use these to "diagnose" current company practices and develop positive programs.

All three age discrimination cases described in this paper can be helpful to human resource managers. Taken together, they touch on almost every aspect of the personnel and human resource system. The question is can one's own company "pass" the litmus test provided by the legal issues raised in the cases. In addition, the ADEA cases present a practical starting point for dealing with middle-aged and older workers.

C. Review Hiring and Promotion Policies and Practices

HIRING

The work force age analysis will quickly show how many workers at what ages hired in what year and placed in what jobs. Even though company policy on hiring will call for the best qualified applicant who can meet specific job requirements, this is not always the case, as past title VII and age discrimination cases point out. Some observations can be made:

—If there is a consistent pattern of exclusively hiring young applicants for certain positions, or if the entire hiring profile is young, further analysis is required. There may be legitimate reasons for the trend or it may signal unintentional or intentional discriminatory practices.

—Review hiring standards and procedures. If tests or other formal assessment devices appear to screen out middle-aged and older job seekers these should be reviewed to see if age biases are contained. Introduce functional criteria provided by one or more job analysis techniques as a supplement to aid in hiring decisions. These are—or should be—age free.

PROMOTIONS

Again, the work force age analysis will lay out, in absolute fashion the exact pattern of promotions by age within company units. Not every worker can go upward in the company; nor does every worker wish to do so. But if younger workers are promoted at significantly higher rates than employees over age 40, review of policy—and more importantly, practice—is in order. Many companies seek to attract and reward younger, ambitious workers with rapid upward mobility options. This is fine if the practice, in effect, doesn't discriminate against longer term employees. Furthermore, these workers are not blind, they can see who gets promoted and who doesn't—or who gets more interesting assignments and who doesn't. If younger workers receive the bulk of promotions and desired assignments, this can have a discouraging effect on middle-aged and older workers with subsequent performance declines.

—Alternative rewards can often substitute for promotions. Extended leave, bonuses, and training opportunities are familiar components of the reward system. If given a sharper age focus, such policies can prove helpful for managing able, experienced workers and diminish age bias within the promotion system.

—To be sure, the "pyramidical" structure of many organizations eventually will impose limits on promotion and upward mobility. The important point here is that for whatever occupational lines under consideration for promotion, age cannot be used to determine which worker obtains the promotion.

D. UTILIZE FUNCTIONAL CRITERIA AND PERFORMANCE APPRAISAL

Developing functional criteria from job analysis methods to undergird or supplement current performance appraisal methods can be helpful. Most of the job analysis systems reviewed in this paper are used to define specific tasks and derive the criteria which determine the performance requirements of the task as well as the functional abilities which workers must possess to meet these requirements. Since these standards reach to the heart of performance, they can and should be used to assess individual performance—regardless of the age of the worker. The following points are noted:

—Every major age discrimination case turns, one way or the other, on the performance appraisal criteria used by management which affected the litigants. Overall, if decisions are reasonably objective, the employers are upheld; where decisions are subjective, the workers are upheld. This is one reason for developing functional criteria.

—A review of the *Gill* v. *Union Carbide* age discrimination case will prove helpful. It will be recalled that the Federal court upheld the employer's performance appraisal system because it had the four critical qualities of reasonable objectivity, comprehensiveness, basic fairness, and communication of the system to all employees.

—In a more positive vein, the functional criteria derived from job and task analysis are simply more accurate and can lead to steps which can correct lagging performance or development options for the worker in question. Selecting a range of worker tasks (high, medium level, and low), with corresponding performance criteria associated with those tasks, can provide a practical and effective evaluation measure.

E. REVIEW TRAINING AND CAREER DEVELOPMENT OPPORTUNITIES

An age analysis of any company's career development program would most likely show that the majority of participants and beneficiaries are under age 40—or even under 35. The working, and somewhat logical, assumption behind career development is that workers who are beginning their careers need special development assistance (that is, younger workers). Those along the way (longer term employees) are assumed to have had their opportunity, or simply don't need or want further developmental assistance. This may not be the case.

FEEDBACK

The best way to determine the need or desire for career development opportunities for middle-aged and older workers is to go to the source. Some of these workers may be content and effective where they are, some may want training opportunity or job changes, others may simply want to retire as early as possible. All are reasonable expectations. But managers won't know of these expectations—or what to do about them—unless they find out. Many human resource management systems have a variety of feedback mechanisms to assess worker attitudes. These can be given an age focus and used to assess both the developmental and retirement aspirations of long-term employees.

COUNSELING

The state-of-the-art of vocational counseling for adult and long-term workers is limited. Retirement counseling, geared toward helping employers leave the company, is provided more often than career counseling. The best approach is to open up career counseling opportunities for older employees and to keep it strictly job related. Other problem areas—declining motivation, personal problems, etc.—will have to enter in; but as the air traffic control experiment demonstrated, a straightforward "no stroking" approach works well with long-term employees.

TRAINING AND DEVELOPMENT

The training and development strategies and programs that work for one age group may not work well for others. As simple as this seems, it is not always taken into consideration. The case studies have pointed out some valuable lessons in this regard.

—Mixed groups do not always produce the best results in training. Longer term workers may feel more at ease taking training with their peers. The Aer Lingus study illustrates this point.

—The type of training and educational programs available suggest age differences. It is not surprising to find younger workers in degree completion programs or in year-on-campus programs. General tuition support for continuing education or inhouse training may prove more interesting for more senior workers.

It is important, therefore, for managers to find out what workers at what ages participate in what company training programs already available. This analysis, plus the feedback process noted above, will help managers provide new programs and approaches for experienced, long-term workers interested in self-development.

F. Employ More Flexible Retirement and Retention Policies

Company retirement policies and early retirement options often become self-fufilling prophecies. Workers, be they proficient or less so, often take the retirement option simply because it's there and expected. Without retention options companies can lose valuable human resources. It is here that functional criteria can be applied effectively. Workers, for health or related reasons, may well want to retire, or need to, because of declining ability. Yet those who are able and willing may well want to continue working if given the chance.

—A mix between retirement and some continued labor force activity will most likely become a trend over the coming years. Workers who want such a choice need not be forced into traditionally peripherial jobs or roles. They can contribute tasks—the tasks that they like and/or are best at—to the company. Job analysis techniques provide the means to link the experience and accumulated skills of longer term workers to significant company needs.

—The research on alternative work arrangements for older employees tends to focus on part-time work, flexitive, job-sharing, and similar choices. This is all well and good, but these are means and should not be confused with the desired ends: productivity and worker interests.

The point is that current retirement and pension policies may not be all that responsive to company needs the interests of workers. More flexible approaches, involving human resource managers with those who set company retirement and employee development policies can and should be tried.

G. Educate Management on Age Factors

Although placed last, this step could be the most important. It comes as no surprise that human resource management systems tends to neglect the needs of long-term workers or that management tends to accept the status quo of retirement policies. Managers as a group simply are not trained to deal with aging and how age factors can affect the company. For the most part, they are not formally trained in the psychology and physiology of aging—the many changes that occur in persons/workers as they move through ages 40, 50, 60, and beyond. Few are aware of the fundamentals of gerontology—the science of aging. Greater knowledge in these areas will affect attitudes about long-term workers and how they can be utilized in effective ways. The selected bibliography that follows serves as a modest illustration of topics that should be considered by human resource managers.

H. Concluding Note

The message that this paper conveys to human resource managers is that aging is a relative and dynamic process affecting all members of a company work force. If understood, age variables can be managed well and effectively to the benefit of the company and all workers. The paper has suggested ways to review and change policies that may tend to neglect middle-aged and older workers.

What the paper provides are new perspectives and new ways of looking at middle-aged and older workers. In one sense, management has the luxury of time on its side. But not much. The demographic and economic forces described earlier, along with the changing characteristics and aspirations of aging workers won't wait all that long. It is hoped that the paper has contributed to the change process needed to build up a relatively new, largely underutilized, and increasingly important segment of the labor force.

APPENDIXES

Appendix 1

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Appendix 2

AGING AND EMPLOYMENT: AN ANNOTATED BIBLIOGRAPHY

The following annotated bibliography includes selected books, periodicals, and some of the research studies relating to the subject of aging and employment. While the listing is not intended as a comprehensive literature review, it does include some of the practical types of resources that may serve as a starting point for human resource managers interested in this subject.

The Age Discrimination in Employment Act of 1967 (29 U.S.C. 621, et seq.) amended: 1974, 1978.

This Federal statute lays out the prohibitions and requirements which employers face in dealing with workers between the ages of 40 and 70. The act also includes exceptions to these prohibitions which employers may utilize in defense of any age-related personnel policy or action. Human resource managers need to be familiar with this law and look to positive ways to avoid legal confrontations between management and individuals in the protected group.

Batten, M. D. 1977. "Age Audits in Employment: Data and Instruments." Port Washington, N.Y.: Clearinghouse on Employment for the Aging.

This monograph lays out the techniques for analyzing a company work force by 5-year age bands. It relates the age structure within a company to the policies which determine that structure, such as hiring rates, promotions, allocations of training and development resources, and retirement policies for workers as they age within these frameworks.

Belbin, E. and Belbin, R. M. 1972. "Problems in Adult Retraining." London: Heinemann.

A practical approach toward retraining older workers, the problems they face, and how these can be managed. The book explains the discovery method and how this task-related, step-by-step approach is useful.

French, J. R. 1980. "Education and Training for Middle-Aged and Older Workers: Policy Issues and Options." Washington: National Institute for Work and Learning.

This monograph examines retirement and personnel policies within the public and private sectors. It explores some of the effects of raising mandatory retirement age and alternatives to retirement. The text then examines education and training strategies that can be helpful in addressing the needs of middle-aged and older workers.

Greenough, W. C. and King, F. P. 1976. "Pension Plans and Public Policy." New York: Columbia University Press.

This book provides a very readable and comprehensive overview of pension policies in the United States. The authors cover the history of pension plans, the social security system, and other retirement income resources. Managers can get a quick but thorough overview on some of the reasons and pressures that may well cause older workers to defer early and normal retirement.

Jacobson, B. 1980. "Young Programs for Older Workers." Work in America series. New York: Van Nostrand, Reinhold Co.

A case study book reporting on what various companies around the Nation are doing to help older workers. The cases are interesting and helpful in that they give episodic descriptions on what these firms are doing. The limitation of this case study approach is that no one company or firm makes an in-depth analysis of the issues pertaining to middle-aged and older workers. The book, however, is a good starting point for human resource managers who want to get the flavor of what some of their colleagues are doing in this area.

Joint Economic Committee. 1980. "Human Resources and Demographics: Characteristics of People and Policy." Washington: Joint Economic Committee.

This committee print examines population and labor force demographics from the viewpoints of changing characteristics within the American labor force. Younger workers, prime age workers, and older workers are reviewed in terms of changing age compositions and the implications for the economy over the coming years. Managers can relate this brief but practical study to their own planning needs.

McConnell, S. R., et al. 1980. "Alternative Work Options for Older Workers: Feasibility Study." Los Angeles: The Andrus Gerontology Center.

This study examines the interests in retirement alternatives on the part of workers in the Lockheed Corp. in Burbank, Calif., and employees of the city of Los Angeles. Interests in part-time work, flexitime schedules, etc., are assessed. One interesting outcome of the study is that the attitudes of workers over age 55 on future work prospects were quite different from management's view of that group. The study illustrates the need for greater communication on employment and retirement aspirations between management and workers.

The National Council on the Aging. 1981. "Aging in the Eighties: America in Transition." Washington: The National Council on the Aging. November.

A Lou Harris survey on attitudes of older Americans, including such topics as retirement income and attitudes toward work and retirement. The survey follows up on a previous study made in 1974 and offers interesting views on how the public, employers, and older workers themselves regard their options for work and retirement.

O'Meara, R. 1976. "Retirement: Reward or Rejection." New York: The Conference Board.

This study examines the changes that both led to and altered early retirement policy over the course of the 1960's and early 1970's. It raises many practical issues for human resource managers, including the costs of early retirement as weighed against possibilities for retaining and utilizing these individuals.

Parnes, H., et al. 1975. "The Preretirement Years: A Longitudinal Study of the Labor Market Experience of Men." U.S. Department of Labor, Manpower Administration R. & D. Monograph 15. Washington: Government Printing Office.

The most comprehensive study ever conducted on middle-aged and older workers. The researchers present a rich variety of data and information on a group of middle-aged workers as they moved across a 10-year period. The study can be of great help to human resource managers who are interested in conducting an analysis of their own middle-aged work force. The design of the study covers the experience of these workers, ranging from income, job change, training and retraining, and retirement experience.

Rappaport, A. M. 1978 "Prepare for the World of Post-65 (and Early Retirement)." Harvard Business Review. July–August.

The article discusses variations in the employment cycle which suggest that workers and management become more flexible about education, training, and productivity. The author implies that educational sabbaticals and other similar strategies can help to assure long-term worker growth and contribution to profit.

Rhine, S. 1978. "Older Workers and Retirement." New York: The Conference Board.

Summarizes a good deal of statistical data on middle-aged and older workers and highlights management concerns in changing policies and practices needed to accommodate and utilize the older worker resource.

Rosen, B. and Jerdee, T. H. 1977. "Too Old or Not Too Old?" Harvard Business Review. November–December.

The article describes the results of a survey of HBR subscribers conducted to determine the extent to which age stereotypes affect management decisions. Older and younger managers were asked to express their views on a number of issues pertaining to middle-aged and older workers. Their responses to some simulated "in-basket" cases on these aging workers are interesting.

Rosenblum, M. and Sheppard, H. L. 1977. "Jobs for Older Workers in U.S. Industry: Possibilities and Prospects." Washington: American Institutes for Research, Center on Work and Aging.

A case study book on positive examples regarding the use of older workers in industry. It covers employment practices in the areas if hiring, promotion, assessment, and retention. Age discrimination is discussed and recommendations are offered.

Shatto, G. M., ed. 1972. "Empoyment of the Middle-Aged." Springfield, Ill.: Charles C. Thomas.

A compilation of articles by both researchers and practitioners who are concerned with middle-aged workers. It includes testing methods used by the U.S. Employment Service for assessing the skills of job seekers over age 45. It also presents articles on counseling techniques for these individuals. A good starting point for managers to familiarize themselves with issues and problems facing their own middle-aged work force.

Sheppard, H. L., ed. 1970. "Towards an Industrial Gerontology." Chambridge: Schenkman Publishing Co.

One of the first efforts to communicte research findings and needs relating to middle-aged and older and older workers. This series of articles covers age demographics, job design and re-design techniques, along with training and counseling methods that can help managers better utilize the older worker labor force. This fundamental work helped to establish the Journal of Industrial Gerontology (now Aging and Work).

Sonnenfeld, J. 1978. "Dealing with the Aging Work Force." Harvard Business Review. November–December.

Sonnenfeld examines a range of issues of practical concern to personnel and human resource managers regarding middle-aged and older workers. These include performance appraisal and developmental strategies that should be applied for successful utilization of this group. While it is an overview on the subject, it can serve as a good starting point for concerned managers.

U.S. Senate Special Committee on Aging. 1981. "Toward a National Older Worker Policy." Washington: Government Printing Office.

An overview of Government policy on middle-aged and older workers. This committee print examines labor force demographics and related data on these workers. It discusses past Government policies to assist this group, including the Age Discrimination in Employment Act of 1967 and subsequent amendments. The print also reviews Labor Department programs, such as the Comprehensive Employment and Training Act and how that legislation affected these workers. In addition, the print provides some new initiatives which the private sector can take in responding to this increasingly important segment of the labor force.

There are several journals which cover issues on aging, employment, and retirement. These are very helpful to human resource managers in that they both cover substantive issues and introduce readers to experts in the field. Another advantage of journals is that they allow managers to absorb important data and information in a relatively short time.

"Aging and Work" (formerly, Industrial Gerontology). The National Council on the Aging. Washington.

This journal is a practical resource for managers and their research staff. It covers a wide variety of topics on aging and employment, ranging from health, productivity, reports on age discrimination cases, to new approaches on retirement preparation. It represents, in many respects, the Nation's best knowledge resource on age factors in employment. Managers would be well advised to utilize this journal as a means of keeping abreast of new and changing information on middle-aged and older workers.

"BNA Pension Reporter." The Bureau of National Affairs, Inc. Washington.

Most human resource managers are familiar with the "Daily Labor Reporter," which covers legislation and current issues before the Congress. The "Pension Reporter," however, is published on a weekly basis. This weekly summary covers a variety of topics, including complex IRS rulings on pensions and other issues affecting retirement income and benefits. The "Pension Reporter" also discusses important age discrimination cases and regulations which relate to the Age Discrimination in Employment Act. Although highly technical, the Reporter also presents information on conferences, research studies, etc., relating to aging workers.

"Harvard Business Review." Boston.

This publication is well known to managers. Articles have addressed, over the last several years, a number of issues relevant to management and middle-aged and older workers. These concerns have included assessing the attitudes of management regarding long-term workers as well as technical approaches that can help human resource managers develop new means of achieving positive solutions on employment and retirement issues.

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